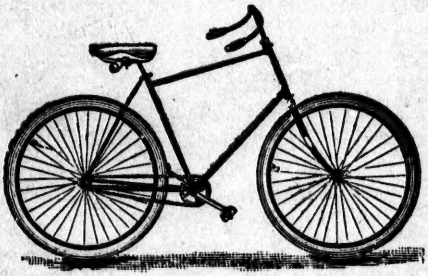
Entered according to Act of the Parliament of Canada, in the Year One Thousand Eight Hundred and Ninety-Four, by William Norrie Robertson, at the Department of Agriculture.

CYCLING!

—BY—

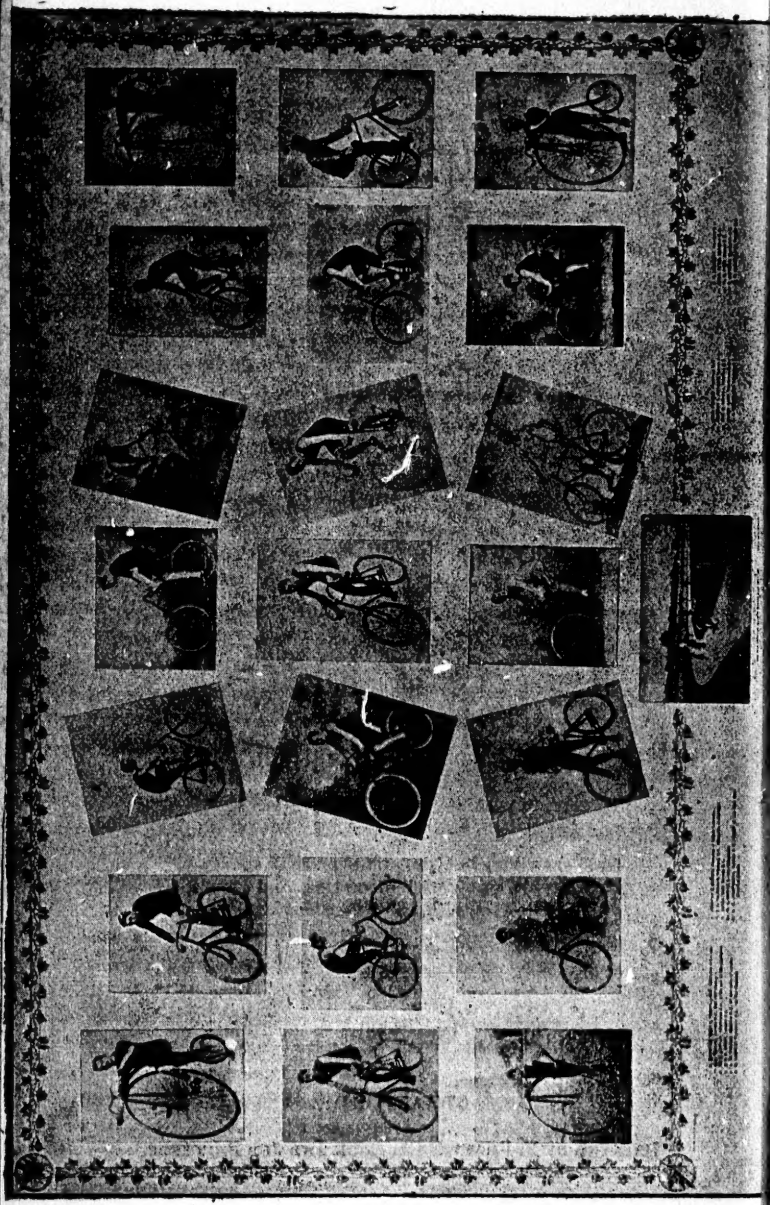
W. N. ROBERTSON.



Gold that buys health can never be ill spent—
Buy a cycle, use it with discretion, and secure health, happiness and long life.

STRATFORD:

PRINTED BY F. PRATT & CO. BOOK AND JOB PRINTERS,
1894.



Fac-simile of handsome 28 x 42 photogravure of Canada's Racing Men, published by W. H. Miln, 5 Jordan Street, Toronto.

485

PREFACE.

The origin of this book, which will account for some of its peculiarities of style, is as follows :—In the year 1890 the writer penned for the Stratford newspapers a series of articles on the subject here treated, after the publication of which a considerable number of persons in different parts of the county expressed a wish that they should be gathered together into a volume. This led to their revision, and the addition of nearly twice as much new matter, the whole forming the work which is now offered to the public.

That the book has many imperfections, the writer is well aware ; they are due partly to the fact that it has been written by economizing moments of leisure snatched from professional labors.

Upon a subject which so many pens have discussed it is, of course, hardly possible to say anything absolutely new ; the most a writer can hope to do is to recombine and present in simple and attractive forms, with fresh illustrations, so as to impress persons who have not been impressed before, thoughts which have substantially been repeated from the days of Dr. Doolittle to those of Hyslop and Carman.

The writer has received valuable information from the literature of R. J. Mecredy, Dublin ; and G. Lacy Hillier, London, than whom none are better authorities, both being past-masters in the art, both being ex-British champions on the path, and both having the confidence of their fellow cyclists.

So far as known to the writer this is the first book on "Cycling" published in Canada. Indeed, "The Canadian Wheelman" and "Cycling," the former

published in Simcoe, the latter in Toronto, give all the latest and most important news on cycleism.

Every cycler and prospective rider should subscribe for, and read, a Cycling journal.

It is just as easy for a grain dealer to buy and sell successfully without reading market reports, as it is for a cycler to obtain "pleasure and profit" from a cycle without reading cycling literature.

A cycler without a Cycling journal is like a mariner without a compass.

Doubtless there are many persons who are better qualified by their great knowledge to discuss the subject here considered; but, unhappily, the most successful men do not reveal the secret of their successes; and if we do not reject criticisms from men who have never handled a brush, nor refuse to follow the directions of a guide-post though it has never hopped off upon its one leg and travelled the road to which it points, a young man who is beginning cycling may accept the hints of a well-wisher whose knowledge of his needs has been derived from observation and experience.

STRATFORD, ONT.

THE PLEASURES OF CYCLING.

Yes, I have it, too.
What's that?
Cycling.
Well, how long do you expect it to last?
I don't think I'll ever get over it.

This echo from the wheel world represents the tone of the great majority of novitiates who happily taste the joys of rolling around some part of this merry earth, turning hither and thither as chance or inclination direct, and always finding some new charm in nature, some noble perfection in art, some more enduring kindness toward their fellowmen.

The love of activity, of genuine hygienic sport for its life-giving effect, for the realization of intense enjoyment of mind and muscle, is characteristic of our race, and flowers in many forms. The writer practices this text, and knows each kind has its special attractiveness to varied natures, but it is doubtful if there is any sport which has taken so firm a hold upon the Canadian public and bids fair so rapidly to increase in usefulness and popularity as the art of cycling, even despite the great and general impediment of inadequate highways.

Cycling gives both physical and moral pleasure. Physically, it enables us to remove ourselves for the moment from pain. Morally, it furnishes a satisfaction for our self-love, which is remarked especially in play and in our struggles against the forces of nature.

Before being a source of positive pleasure, our physical activity is stimulated by pain.

Those movements, called spontaneous, which are the first signs of vitality in the child or animal, are

explained by supposing them to be a reflex of some indefinite discomfort. Our organism is not a machine, as some say, in any of its parts, but is living and animated throughout. Even the organs that perform without the intervention of the will, and the play of which seems to be mechanical because it is not accompanied with a recognizable sensation may have the rhythm of their movements determined by some local sensibility.

When we feel any suffering, we have only to execute some motion to feel it less. Cycling is the best of anæsthetics that accompany even the normal working of our organs, and which we experience when we are occupied only with feeling ourselves live. When we make an energetic effort, we are nearly insensible to pain as long as it lasts. When we are at rest, a blow on the shoulder will hurt us. In the ardor of sport, in the excitement of a cycling contest, the roughest shock will hardly be felt. Every very intense sensation, we also know, provokes convulsive movements, sudden and violent muscular contractions. These movements are not mechanically determined by the sensation, they are produced voluntarily, although they will not remove the cause of the pain, they, at least, tend to mitigate its effect. The howling of the wounded dog, the squirming of the worm that is cut in two, are a voluntary effort to escape suffering. In the recent twenty-four hour ride at the Veledrome, Buffalo, Paris, Lumsden, the Scottish crack fell, but immediately mounted again and rode fifty-six miles when he was forced to dismount because of the pain. It was found upon examination that his collar bone was broken, and a gaping thigh wound inflicted. The French journals say, the force of will, the stoicism displayed by him were "simply frightful,"—the cycling motion for over two hours prevented his feeling pain, he having ridden fifty-six miles in this condition in two hours.

If the same pain recurs frequently, the animal

soon remarks that some among these vague movements will contribute more directly than others to assuage it, and will give the preference to them. The habit of resisting a particular suffering by a special movement, becoming hereditary, forms a veritable instinct. In conformity with the general laws of evolution, there is established a selection between injurious and useful reflex actions, and the latter will gradually predominate.

Even when we are suffering from any accidental uneasiness provocative of special muscular reaction, we are impelled to move by the simple need of motion. Every animal has to expend daily a more or less considerable sum of energy to procure food for itself. The oyster, fixed on its rock, imbibes, without effort and almost passively, the vegetable matter which the waves bring to it. A snail drawing itself slowly along on its belly, easily reaches the leaves which are in its way. The ox marches, step by step, in the field for hours, feeding upon the grass-leaves with which its lips come in contact. A wolf has to make journeys of leagues every day in search of its prey. The swallow has to keep in incessant motion to procure enough insects to satisfy its appetite. To the necessity of eating is added that of escaping enemies, and this exacts an increase of activity from the animal. Thus each one, according to its kind, is obliged to be in motion more or less every day, and is organized for it. If, through accidental circumstances, its activity ceases to be useful, it is, nevertheless, obligatory upon it, for its physical constitution, having become adapted by heredity to the normal life of the species, cannot abruptly bend itself to other conditions of existence. Its organism continues to furnish it the same quantity of energy, which it has to expend in some way. Hence the movements of the captive animals—of the lion which paces its cage, and of the canary-bird that leaps from bar to bar. Hence the physical exercises with which persons whose occupation con-

demns them to a too sedentary life relax themselves. This necessity for cycling is especially great in youth, because the young person must train himself in all the movements he will have to perform at a later age, and must also exercise his muscles and joints to develop them.

Thus every animal has a tendency daily to expend a certain quantity of force, which is determined, not by the accidental wants of the individual, but by the general wants of the species.

How is this expenditure regulated? By what criterion do we know when we need exercise? A matter so indispensable to the good working of our organization cannot be the product of reflex action. It is evident that animals cannot take exercise by rule, after the manner of a gentleman who imposes upon himself the obligation of taking "a constitutional" every evening. Even man can do this only exceptionally. Our intelligence permits us to satisfy these physiological exigencies in a more rational manner; but it does not give us notice of them. What would become of the most reasonable being in the world if he had to depend upon his reason to tell him what he needed? A real necessity exists for us to be warned by special sensations.

We sometimes dispose of this explanation cheaply by speaking as if we had direct knowledge of our strength. Nothing could be more simple were this the case. Strength accumulates in us while we are inactive, ending by giving us a painful sense of nervous tension, which prompts us to expend our excessive energy in certain exercises. We go through these first as a relief; then, our reserve force having been exhausted, we feel our strength failing, and our need of repose comes upon us. There would be no considerable objection to speaking in this way if our purpose was simply to indicate a correspondence between our muscular sensations and the dynamical state of our muscles. But we must take care not to believe that there is the shadow of an

explanation in it.

What is it that takes place in us during that period of repose when we say that energy is accumulating in us? Our muscles are undergoing restoration, are getting into a condition to form new chemical combinations. But we have no knowledge how much force they can expend at a given moment; it exists in them in a purely virtual condition. We do not feel it any more than we feel the expansive force of the powder contained in a certain flask, or the heat that may be disengaged from a particular piece of charcoal. We have not, therefore, any degree of consciousness of our disposable energy. The anticipatory sensation which we feel just as we are about to make a movement, and which we take for a consciousness of the force we are going to expend, is only a preconceived imagination of the sensation of effort that will accompany the contraction. Even at the instant when the contraction is effected our sensation of effort only indicates to us the extent of the actual tension of our muscles. It answers so little to the real expenditure of our energy, that it would be exactly the same if we should stretch them in that way without performing any work. We shall, therefore, have to give up these conventional explanations and regard matters more closely.

When we have continued still for a long time, we feel, first, a great desire to move. Like all our appetites, the inclination to move is recognized, even before any sensation can give us cognizance of it, by the effort which it produces on the imagination. In unconscious hunger or thirst, we think, not precisely that it would be agreeable to drink or eat, but that some broiled chicken or a cup of cocoa would be very nice. So the young man who has been confined too long dreams of cycling and horse-back riding, before thinking that those exercises will do him good, he pleases himself with representing them to himself. This desire, as it de-

fines itself, becomes more intense; and, if it is opposed, intolerable. At the same time physiological phenomena become apparent, augmenting the uneasiness. A process of nutrition and reintegration is carried on in the muscles during rest. The products of combustion, or the molecules that form stable compounds, are eliminated and replaced by fresh combustible matter, or unstable compounds. The muscle is then in the sensitive condition.

The most minute spark will bring on an explosion; the slightest impression will provoke violent reflexes. In such a state we feel nervous as it is called; or cannot keep still. The expression is exact. Our sensitive condition requires the spontaneous movements which the mere idea of motion provokes. A typical example of such suffering from forced rest is afforded by the pupil waiting for school to be dismissed. He feels as if his back was breaking and his legs were growing stiff. When will the bell ring? He wishes with a frantic inclination that he could jump over his seat, shout and run. He wriggles and drags his feet on the floor. A hard look from the teacher fastens him to his place, and he quiets himself; but what a punishment it is to endure it!

Cycling also procures a positive physical pleasure for us. When we give ourselves up to an exercise, or go at anything with great energy, all the functions are accelerated, the heart beats more rapidly, breathing becomes more frequent and deeper, and we experience a general feeling of comfort. We live more and are happy in living. Rapid and boisterous movements produce also a kind of intoxication and giddiness that have a peculiar charm.

Let us imagine, what are the feelings of a bird as it opens its wings and glides through the air like an arrow; let us recollect what we ourselves have experienced in being carried by a horse at a gallop or upon a boat dipping into the hollow of the waves, or in the whirl of a waltz, or in the coasting on a

cycle down a long, steep grade ; all these motions evoke in us the undefined idea of the infinite, of unbounded longing, or superabundant and careless life, a vague reflection of individuality, a craving to go without restraint—to be lost in immensity ; and such vague ideas enter as an essential element in the impression which a great number of movements cause us. The observation is correct ; but we believe that this kind of pantheistic intoxication is at bottom only a cerebral congestion.

A horse plunging into a rapid gallop, and seeing a large void space opening out in front of him, will never fail, as the saying is, "to do himself up" The mere rapidity of his actions give him vertigo ; he loses sight of danger, and when an obstacle suddenly rises against him, if he does not jump over it he breaks himself against it. So all rapid movements deprive us of complete possession of ourselves ; we go on, we follow our impulse. It may be a foolish one ; as much the better. Go on ! up ! quicker ! What is such behavior but sheer intoxication.

To the physical pleasures of cycling is added a moral and emotional pleasure. In like manner as it helps us to escape from physical suffering, muscular activity may serve as a remedy for disappointments—for moral pains. We weep and struggle when we have a great grief, as well as when we are suffering from a physical wound. The most afflicted man forgets his trouble when he is performing a cycling contest. Byron had his boxing gloves brought to him, and went through his accustomed practice with a servant, while his mother was being buried ; but the servant felt his touch was stronger than usual, and all at once he threw down his gloves and fled to his room. Who has not felt the necessity of what is called throwing off his grief ? When we remain quiet our mind is, as it were, bent back upon itself, and all the pains that can affect us are augmented, as it were, by the very attention which

we give them. In action we forget ourselves, directing our thoughts to the attainment of the purpose upon which we are fixed.

Physical exercises also give us positive mental pleasures, the chief among which is the satisfaction of our self-love. When we execute any movement or devote ourselves to an exercise, we try to get as much as possible out of it. We want particularly to acquit ourselves better than any one else, and have a silent feeling of pride when we have succeeded. This leads to a real increase of ardor, and a luxury of physical activity. Observe youth who are indulging themselves in any sport together; is not emulation the essential principle of their activity, which enables them to expend all they have of available energy? Tell a child to run as long as he can; he will stop in a short time out of breath. Give him rivals, and the fear of being left behind will prevent his feeling fatigue and provide him with unaccustomed nervous resources, and he will go till his strength is exhausted. It is a recognized rule with all gymnasts, cyclists, etc., that one should not train himself alone in exercises of speed; there should be at least two, to excite one another by competition. Probably Windle's wonderful speed was developed by the opportunities he had of riding with Rowe in the latter's practice spins. Some persons have tried to show that the pleasure of play is disinterested. They are speaking without knowledge. When we are playing, we are entirely occupied with the result of our activity. We may not be very particular in the choice of the end we shall seek; we may not care whether that end is worth the trouble we are taking; but, for all that, we may not be willing to have our faculties at work for nothing. We fix upon some end that we shall reach. If we take a walk, we say that we are going here or there, or will walk so many miles. If we play a game of skill, we want to win, to make so many points, to accomplish something; we are not, then, seeking merely

the pleasure of acting, before we try to reach a result agreeable in itself. Games of chance have no attraction if one is not interested in the play. Sometimes this interest is conferred by the hope of a material or pecuniary profit; most frequently in the pursuit of the honor of having won. But is working for glory disinterestedness? Pascal's analysis was more complete. The hunter loves to hunt, not only for the pleasure of walking in the fields in pursuit of a hare, not only for the pleasure of bringing his game home, but chiefly for the proud joy of exhibiting it. It may be said that this is all vanity; that the object is not worth the pains it has cost. But that matters not to the argument. We do not say that play is an affair of well-defined interest, but that we are excited in it by considerations of interest. At the moment when we are striving to arrive at that end we do not measure its importance, we do not think of the reasons that first started us; there is the goal we have proposed to ourselves, and we run for it. If the thought occurred to us for an instant that this was all futile, only a pretext, our ardor would be cooled down at once. It is also easily seen that, when we engage in any exercise or game, we, by a mental effort, exaggerate the importance of the end sought. If we play billiards with a strong adversary we call it a match, and hire a hall; and the players please themselves by imagining that they are placing their reputation on each shot. A game of chess becomes very dramatic, and the player's hand trembles when he makes a decisive movement. When we start on a cycling tour it pleases us to imagine for the moment that we are going to travel into distant regions. Walking in the forest, we say that we are exploring the country, and are going to make discoveries. In this way we try to satisfy the spirit of adventure that the usages of our too well regulated society have not wholly stifled.

It is, therefore, an essential quality of play that,

to take pleasure in it, we must mount the imagination, and fancy that what we are doing on a small scale is done on a grand one; must substitute mentally, for the futile activity in which we desire to be absorbed, some mode of superior and more fascinating activity. Tell us that we are wilfully fooling ourselves if you please. Tell us, even, that we have a secret consciousness that it is an illusion, and that we are more than half a dupe to the pretext that we have given ourselves.

It is nevertheless true that the pleasure of action for the sake of action is not enough, and that we take interest in the game only so far as our self-love is seriously interested in it. It is still necessary for us to have a difficulty to overcome, a rival to surpass, an advance to make. In dismounting from a horse, in taking off our skates, in putting away our cycles, we congratulate ourselves that we have become stronger, and we feel an impulsive necessity for telling of our prowess. We should take less pleasure in a game of skill if we could not convince ourselves after each essay, and convince some one else, that we had become more adroit in it. Every exercise in which one is decidedly a past-master inspires a vague distaste.

We are able also to determine, in every physical exercise, a particular kind of pride. Very simple or childish, if you please, but all the deeper and more instructive—that which one feels in conquering the forces of nature. We delight to refuse what they solicit us to do, and to accomplish what they seem to forbid. Hence the pleasure felt in climbing a hill, putting down an obstacle, leaping a ditch, and walking against wind and rain. In canoe sailing we would rather stand close to the wind than be carried with it, and prefer running over the waves to flying before them. Of all these forces we struggle most earnestly against and most delight to overcome that of gravitation. It binds us to the earth by fetters which we are anxious to unloose, and in-

flicts disabilities upon us and exposes us to dangers that we are glad to escape. Motions of speedy transport are pleasant, because they relieve us for the moment from the burden of the feeling of inertia. Hence the agreeableness of riding, driving, cycling, spring-board jumping, vaulting and riding in an express train. There is a charm in dreaming that we are leaping immense distances and prolonging the bound by the force of the will alone. In the struggle against height, falling is defeat, equilibrium is the defensive; motion of simple translation is the beginning of enfranchisement; and movement upward is triumph.

HISTORICAL.

"Now Heaven, in all her glory, shone, and rolled
Her motions, as the great first Maker's hand
First wheeled her course."

—Milton.

BICYCLE, [L. prefix bi, two, and Gr. kyklos, a wheel.] A vehicle consisting of two wheels, one behind the other, connected by metal bars carrying a seat, the machine being propelled by the feet of the rider.

Many enthusiastic cyclists imagine that they can find traces of the entity of the cycle at a very early period. A few believe they can recognize it in the cartouches of Egyptian hieroglyphics, and even find allusions to their fascinating pastime in the Latin poets.

Again, Shakespeare probably anticipated the military cycle when he saw in imagination, Achilles mounted on a cycle as he shouts:

"Come here about me, you my Myrmid-cyclists;
Mark what I say.—Attend me where I wheel
It is decreed—Hector the great must die."

Although we have record of vehicles somewhat similar to our cycles of the present time, having been in use some hundreds of years ago; it is only during the past twenty-three years that they have attained a state of perfection equal to that of any other department of mechanical science.

In 1808 a machine having two wheels connected by a bar carved like unto a horse, made its appearance in Paris "Hobby-horse." In 1818 a German named Baron von Drais, of Saverbrun, near Frankfort on the main, invented the first machine any-

thing like our '94 cycle. It was called the "Draisnene" after him. It was simple in construction. Two wheels connected by a curved bar of wood. There were no driving cranks upon this machine, but the driver progressed by striking the ground alternately with his feet, taking long strides, and maintaining the balance. Down hill this vehicle ran at a great pace, which is clearly indicated in the caricatures of the period, wherein the artist is never tired of showing the unfortunate riders of these contrivances plunging down hill at top speed and smashing up at the bottom.

McMillan of Dumfrieshire, Scotland, first adapted crank driving to the "Hobby-horse" about the year 1840, and it is said he frequently rode it 14 miles to market, keeping pace with farmers in gigs. Within its wooden body (being hollow) he stored an extra suit of clothes, as the Grecian leaders stored their warriors in the wooden horse at the siege of Troy.

Lallement, a mechanic in a shop of a Parisian perambulator-maker first applied cranks to the front wheel of a "Hobby-horse" and produced the vehicle known as boneshaker. He came to America and introduced it here about 1865, returning to France he set up in business for himself. These machines soon appeard in many forms in different countries and were the observed of all observers.

The first American-Indian who saw a cycle said, "See lazy man walk sitting down."

The "Phantom" was the next cycle to appear, having wooden rims and rubber tires (yet unlike '94 patterns) nailed on, and wire spokes. Starley next invented the "Ariel," having a large front and small rear-wheel and backbone something like the ordinary of 1876. In 1873 the Coventry machinists' Co. produced the "Gentleman's Bicycle" and Sparrow of London, was the first to make a road record, going from London to John O'Groat's in 15 days. The Singer firm of Coventry produced the

"Challenge" ordinary in 1876, well known to this day. Then was popularized the "Kangaroo" made by Messrs. Hillman, Herbert & Cooper in 1884, famous for a time, then it gave way to the Rover type brought out by Messrs. Starley & Co. This machine had a large wheel in front and somewhat resembled the ordinary in appearance. In 1885 the Humber Co. built a safety, with small steeriug wheel in front; minus the upright stay (the Raleigh Cycle Co. claim to have devised the upright stay for diamond frames,) otherwise it was the nearest approach to the modern safety. However, it remained for Messrs. Starley & Co. to produce the model of the Rover type of safety in use at the present day, and Mr. J. K. Starley has been presented with a memorial plate—an honor conferred for having set the pattern of safety cycles to the world.

Solid rubber tires were then fitted to it. In 1889 the Pneumatic tire was invented. Mecredy of Dublin, was among the first to bring it before the public, and that year won the English championship. The original "Dunlap" secured a start of all others, and ever since nearly all the best men have ridden it. A. A. Zimmerman, world's champion, uses it.

Last year the Dunlap Tire Co. bought the Comet patent, hence the Comet tire and Dunlap tire amalgamated, therefore the product now is better than ever. The Laforce tire is an excellent all round article.

The Palmer came like a meteor to the front rank last year.

The G. & J. corrugated non-slipping tread adopted by the enterprising Goold Bicycle Co., Brantford, are favorites with all who have tried them.

The perfect Penumatic tire is not yet.

The ordinary is without question the expert's cycle, as the combined driving and steering with the front wheel, causes it to be primarily difficult to learn; but when fairly mastered, it is much more under control, as the feet and hands jointly share

the steering, and the machine being driven by the front wheel, the rear wheel becomes actually a "trailer" which of necessity ensures straight running if the steering be reasonably good, and just as it is easier to drag than to push a wheel under such conditions, so it becomes more easy to steer a front driven one. As soon as the complication introduced through propulsion by the feet, direct on the steerer is overcome.

All these remarks, also, apply to the geared ordinary when built, as it should be, on conventional ordinary lines, as it then behaves exactly in the same way as the ordinary, and is as steady and as handy as that type of machine. In the ordinary and geared ordinary the rider is lifted somewhat higher above ground and out of the mud, and if the machine be properly fitted with saddle-flaps and a rear wheel mud guard, it is cleaner than any other type of cycle, and if a geared machine is not geared too high it may safely be said to be the best form of cycle for all round use.

The safety, indeed, offers great attractions to beginners, and is likely to always hold its place amongst that class, as it will always be the most popular type of cycle for it is safe, whilst presenting as it does, a relatively small surface, windage is less apparent when riding than in higher wheeled types. Probably the greatest objection to the present diamond frame safety is its mud and dust throwing capacity, however, as the years roll by there will be lighter and more efficient protection in this direction.

A HUNDRED YEARS HENCE.

A writer in a daily paper says :—

"The cycle of 1993 will be built on much the same lines as the safety of 1893—i. e., with two small wheels nearly the same size, the front wheel being slightly smaller. This was the plan of the first machine built in 1817, and, now, after a lapse of 76 years, we have come back to the original de-

sign. A machine on this plan can be built stronger and lighter than on any other mode. With the weight between the two wheels there is less vibration than when it is over either one of them, as in passing over an obstruction the weight is lifted one half the distance in the former case than it is in the latter.

Then by the use of some alloy of greater tensile strength, weight for weight, than steel, and by filling the tires and the tubes in the framing with hydrogen instead of air, the weight of a road machine will be reduced to ten pounds or less, while racing machines will not weigh half that much. The machine will also be made so that it can be folded up and carried about or stowed away in a trunk. By improvements in the construction of the bearings of moving parts, friction will be almost wholly eliminated, and the method of applying power will be so perfected that there will be absolutely no such thing as lost power.

The roads will be prepared especially for cycles, the grades being very slight, and, in fact, sufficient to provide proper drainage. The surface will be hard and smooth, the outer edge of all curves being raised as on a track. The roads will be kept clean, as by that time the horse will be found only in zoological gardens. The improvement in the rider will be equally marked. From the continued and increasing use of the wheel a race of people will be evolved that will take to cycling as readily as a foreign immigrant does to politics. Taking all these things into consideration we may expect an average speed of 30 miles an hour on the road and 60 miles on the track. The use of the machine will be universal.

Children will be taught to rid as they are now taught to walk. The suburbs of our great cities will extend from 60 to 100 miles in every direction. All patents will have expired, and such large quantities of bicycles will be manufactured that the cost will he nominal and within the reach of all. There will

be no more crowded tenement houses. The artisan, who will work only four hours a day, will live with his family in a cosy little home in the suburbs, where he can see the sunshine and breathe the fresh air. The use of the wheel will have so improved the stamina and physique of the race that the only cause of death will be old age and accidents.

Railroads will be used for the transportation of freight only. Every individual will own a bicycle. Those intended for long-distance travel will be run by small but powerful storage batteries, which may be charged at automatic electric stations by connecting the battery to a dynamo and dropping a coin of small value in a slot. With machines of this character it will be possible to attain a speed of 150 miles an hour, and to overcome the wind pressure they will be fitted with wedge-shaped wind shields, made of some tough yet transparent substance. The bicycle will not be used in war for the simple reason that as dyspepsia will be unknown everybody will feel so well and be so good-humored and disinclined to quarrel that there will be no one to go to war."

LEARNING TO RIDE.

The knowledge which a man can use is the only real knowledge, the knowledge which has life and growth in it, and converts itself into practical power. The rest hangs like dust about the brain, or dries like rain-drops off the stones.

Skill to do comes by doing, knowledge comes by eyes always open, and working hands; and there is no knowledge that is not power. If men only remembered how much depends upon themselves they would often be more active than they are. The excellence they would attain they would try for, and that is indeed the only way by which it can be acquired. Skill to do comes by doing. Success is often the child of many failures. There is wonderful power in the little child's song, "Try, try, again." The German proverb, "Roast partridge does not fall into a man's mouth," is a true one. No cyclists, you must load the gun, and shoot the bird, and light the fire, and twist the bird about before it, before the roast partridge finds its way into your mouth.

Let me entreat you to hold fast to that determination that means success—doing, remembering always that there is no royal road to learning in the science and art of cycling, any more than there is in the acquiring a knowledge of the classics without judicious application, and that no human being can become an expert in any department of skill without a due amount of physico-mental culture.

Why is it that Wells can "ride rings round" Rivers, and a long day's ride has little effect on him? Wells has acquired good form, Rivers a bad form,

and knows not what the real "poetry of motion" is like. For the greatest pleasures in riding, for the greatest ease in long distance riding, and, for the greatest pace in race riding "form" (excepting judgment,) is the most important factor, and every beginner should strive to attain this accomplishment. Acquire the feeling give way to, or work with the wheel, never against it, i.e., the rider and cycle should act and feel as if they were one piece of smooth working machinery.

EASY METHOD.

With care the knack of riding a cycle can be accomplished without any occasion for falls, or danger of injury to wheel. By this method we have frequently taught men, in half an hour to ride fairly well, who had no previous knowledge of the art.

Lower saddle, remove pedals, select a smooth, wide surface or road having a slight incline. When on saddle, feet should touch the ground, propel with toes alternately touching the ground, keeping feet off the ground as long as possible. Having gone to bottom of incline, walk back, pushing cycle to top; again repeating the performance, until the entire distance can be ridden without once touching the ground. Confidence in ability to do, as in learning to swim, is of paramount importance.

The embryo cyclist should learn from a "trainer," or in one or other of the many private schools, in which experienced riders undertake to instruct beginners for a moderate fee.

HELPS.

If the intending rider should have an opportunity to practice a few minutes on a tandem, or say 15 minutes on a home trainer daily for a fortnight "learning to ride" would prove to be an easy task.

ANIMALS.

Dogs are a constant source of danger to the cy-

clist. They should never be allowed to accompany a cyclist or cycling party. Dogs rushing out from sidewalks or suburban gardens frequently bring the passer to grief, and we have known them run straight at an advancing cyclist after dark, though his lamp was brightly burning.

Pigs, goats, cattle, and horses resting on the road at night are dangerous, being almost sure to move when the cyclist thinks they should not. By going at a very slow pace the cyclist can easily pass safely during the day, however, if riding fast when it is dark he will frequently find himself in very awkward positions, if not dangerous.

BALANCE.

To balance a cycle the rule is, turn the steering wheel toward the side to which it appears to be falling, generally the opposite to what the beginner does do; if the wheel be too much turned a fall is the result. Progress is soon manifest, though not rapid, and the rider gradually acquires, in a greater or less degree, the capability of maintaining automatic or unconscious balance. We have observed cyclists riding with a look of painful concentration, watching stones, gripping the handles firmly, and apparently ill at ease; such are generally beginners. These individuals never properly ride a cycle; they propel it, and stay on it, but its "poetry of motion" and greatest merit is to them unknown, and from lack of self-confidence, undue nervousness, caused by improper instructions whilst beginning, or absolute incapacity, has prevented them from acquiring that automatic balance which is the highest development of cycling.

During the rapid dashes of the trained racer around the track, the thought of balance never occurs to his mind, although it keeps him steady and upright on his wheel, however, he is unconsciously adjusting and arranging his weight so that the cycle pursues a straight and even course. When the be-

ginner has mastered the arm steering of the cycle, he should devote some pains towards trying to advance to what may be termed the body balance, that is, he should make every effort to balance and steady it as much by the adjustment of his bodily weight, as by the use of the handles. In later stages riding without touching the handles is excellent practice, and to the eccentric and now discarded fancy for riding long distances "without hands," i.e., not holding the handles, may be ascribed the accurate steering and balancing which characterized some of the champions of the past, upon road and path. The balance being acquired, remember, "achievement is command."

BELL.

The best type are those which ring both when the lever is pulled and when it is let go; the noise they make is characteristic of the cycle, and the persons rung to, know exactly what to expect. In case of collisions, being without a bell tells against the rider.

BRAKE.

Brakes in our opinion should never be applied to a gentleman's cycle, for many reasons. They may not work when wanted, they may break whilst in use, they are unsightly, they are an extra weight to carry. Back-pedalling should take their place. With practice it is easily acquired. Should the beginner not be able to control his wheel going down steep hills, he had better walk them until he can do so, and in this way avoid serious accidents. Should a pedal pin break whilst back-pedalling, and the cycle get beyond control, place one foot on steering wheel close behind forks and apply pressure.

For ladies use, many consider the brake an essential part of the cycle, it should be properly fitted and thoroughly effective, as the rider's safety and

comfort depends upon it. The lever should be well within the reach of the smallest hand, and the brake spoon should be brought into effective contact with the tire surface. The most effective break yet upon the market is the front wheel spoon break, the objections are the dirt throwing qualities.

COASTING.

If you would have your machine last long, do not coast each rough hill at full speed. Nothing subjects a machine to strains and twists as does this.

CONTROL.

When a rider is moving in good form upon his cycle he feels that he is acting in unison with his steed—as though they were one piece of smooth working machinery. When the rider feels as though the wheel was not running smoothly there is something not right, and in nine cases out of ten the fault is in the rider. A skilful rider can take a light safety, over almost any obstacle, whereas, under the same circumstances, a clumsy rider would collapse on a heavy cycle. It is effected by slightly raising the front wheel as the obstacle is touched, and then immediately putting weight on the pedals and throwing it forward as the front wheel passes over, thus easing the rear wheel. The writer has frequently succeeded in crossing culverts from 2 to 5 inches in height at a good racing pace without the slightest injury. No thoughtful cyclist would attempt such feats, unless under unavoidable circumstances.

DARK.

It is very difficult to estimate the distance of a cycle lamp light, therefore, if the rider goes at all fast he will surely run into objects whatever they may be in his way. In Stratford we never see drunken men, which in some parts of the world are said to be a source of danger. Hacks and horses

frequently stand at the roadside and often are not easily observed until the rider is close up. Without lamps there is great danger of cyclists running into each other. Hence the cyclist's lamp should be carefully fitted as one constantly going out is sadly annoying. A good one, well cleaned, and trimmed should remain reliable for years.

ELBOWS.

When the rider is sitting upright the arms should be bent slightly, the elbows fairly close to the side; the handles coming well back.

FORM.

Form, style or action is one of the most important factors in cycle locomotion. The embryo cyclist should ever study his own form of propulsion, even every joint and limb. The head, neck, shoulders and arms, should act freely as stiffness tires the rider and unsteadies the steering, this must be carefully guarded against. Of course, in sprinting these parts may all become tense. Gripping the handles like a vice soon fatigues the rider, and in order to break the habit it is sometimes necessary to change the handles, Clumsy methods of holding handles, a futile source of constraint and stiffening may often be remedied by moving the handle-bars upwards or downwards. The body, therefore, should always be maintained in an easy, slight of motion sort of style.

Observe the action of the thighs, legs and ankles of the men one sees on the road or path, and note how few there are who use their power to good or the best advantage. Many pump with knees too wide apart, others with the in-kneed action, this is preferable to the throwing-wide habit. Straight driving is the ideal to be aimed at by all. The beginner can, whilst practising, cast his eye, glance down his leg and see that all the joints are moving in line; the heel may be turned very slightly in as

it is in walking, following the natural construction of the individual. The thigh, knee, leg and foot should move in exact line. When riding behind another cyclist notice how few there are that follow this rule. The "screw" action wastes power and develops parts of muscles not required at all in straight form. Bent pedal or crank often accounts for the formation of this very bad habit. Good thigh and leg action is soon acquired, whilst the good ankle form, can always be improved; we learn more of it every year.

Ankle-form, is that "push and pull" action which keeps the cycle's momentum between the points where the effective power can be applied, and the more it is practised the more accomplished the rider becomes.

The faculty of developing ankle-form is greater in some men than others, however. all men can become fairly proficient, by practice, at half pace. The most powerful position of a muscle is midway between extension and retraction, hence the most effective action of the ankle muscles is imparted when the foot is at about right angles with the leg. This ankle-form is the bridge which conveys the powerful thigh thrust into the "rotary" action, and which by little effort applied at the proper time, keeps alive the momentum of the wheel. More practice and experience are necessary to manifest a good ankle-form on the pneumatic tire than the now obsolete solid or cushion tire. A satisfactory ankle action cannot be secured without the use of special shoes, as the rider must have some firmer grip of the pedal than is afforded by the plain sole, or by the use of the toe-clip, which is only effective in connection with the forward thrust. (For shoes see Under-dress.) The beginner having secured a pair of proper shoes commences to study "form" under the most favorable surroundings, and though, at first, the results may not appear to be commensurate with the exertions undergone, he should bear in

mind that he has not only to educate his muscles but to develop them, a process which takes time, and can only be accomplished by steady and persistent exercise, even at the cost of some ennui, stiffness and tendency to cramp, which gradually disappear as proficiency obtains.

The novice will bear "these few precepts in thy memory," through all his riding in the earlier stages, will, most assuredly, profit thereby. The method of obtaining the best results, always supposing that coaching by a competent friend is out of the question, is to select a smooth and level piece of road, or racing path, and ride thereon, if possible, daily, studying all the details, always stopping short of fatigue; this careful, slow work is of untold value. Adjustment should be made over and over again until a comfortable position is obtained.

FEET.

The path racer rides with the pedals set well towards the toe. This gives him great sprinting powers, and a much longer ankle-throw. The road rider's pedal is fitted well toward the middle of the foot, giving him greater power; most of the work being done by the thigh, and body weight. The heel should be turned very slightly inward,—nature's position, (cycles are now being made narrow across the sprocket,) and maintain a firm grip of the pedal without any side movement.

HILL CLIMBING.

Short hills may be rushed, as the impetus will carry the rider up without much effort. The rider will find rest in change of position, when not very steep, bending forward and using ankles well, when steep pull on handles and sit up. The beginner may find it easier to walk very steep hills, and he will be astonished to find how easy hill climbing becomes with practice.

To climb a hill is an easy matter when one

knows how, and it is equally easy to know how, although to climb steep grades some practice is necessary. Many riders make the mistake of tackling every hill with a burst of speed and pedalling as fast as possible as far as they can stand it. The result is that they soon become winded and tired and are obliged to dismount. A slow, regular pace is much better adapted to the work, and after one or two efforts the rider will get the knack of keeping both pedals moving, not allowing one foot to stop till the other has started. The breathing will be equalized and the rider will find his staying powers increasing. To get the most power out of the wheel the cycler should sit well over his work and lean forward, not lifting too hard on the handle bars. On very difficult hills it may be necessary to get a firm grip on the handle bars, but ordinarily this is not necessary.

These few directions to the novice in hill climbing are not set down for "hard and fast" observance under all conditions. The common sense of the rider must be brought into play as circumstances arise. The rider facing a long, hard hill must brace himself for a more difficult task than a shorter incline and save his strength as far as possible. It is unquestionably advisable to occasionally dismount and walk a while when the rider is on a long journey or out for a day's ride, when the route is dotted with numerous steep inclines.

Many riders can progress easier at hill climbing or in short sprints by breathing quickly and shallow rather than holding the breath, and are not troubled with that distressed feeling "air hunger."

KNEES.

The knees should move upward, forward and downward, like the piston-rod in a steam engine, without the slightest lateral motion.

MOUNT.

If cycle be not built too high, sit on saddle with

right foot on right pedal, lift foot on ground, give slight movement forward, catch left pedal as it rises.

Another method is, place left pedal just forward of the vertical, place left foot upon it, springing quickly into the saddle, right foot will catch right pedal as it rises.

Beginners usually begin with the ungraceful method,—placing left foot on step and hopping along until the cycle is balancing nicely and then springing into saddle.

In mounting, when going up a hill, do so with wheel almost crosswise on the road.

DISMOUNT.

Active riders may dismount by allowing wheel to almost stop, then bring right leg forward and upward over frame to the left to the ground, or vice versa.

An easy method is—place left foot back on step, being careful not to get it between spokes when feeling for step, and step backward to the ground landing on right foot.

Another method is—place weight on pedal at its lowest point, and bring the other leg backward to the ground, watching not to touch mud-guard or rear wheel. In emergencies, hold handles, spring back on feet, providing you are tall enough not to touch mud-guard.

MOUTH.

Every person, cyclist or no cyclist, should always breathe through the nose, sleeping with the mouth open is perhaps the most frequent cause of throat catarrh, and the dry parched throat feeling, when riding. To moisten mouth and throat, water and glycerine, in the proportion of five parts to one, and lemon-juice may be added to make the mixture more palatable. Some cyclists find linseed tea and glycerine better. Nitre, compressed into small

lozenges or pillules containing 5 grains each allowed to dissolve in the mouth at any time will cause a free flow of saliva. The athlete in good condition, who breathes through his nose, will not require anything to keep his mouth moist.

If every rider would breathe through his mouth "fly traps" would soon become extant.

NOSE.

The inner surface of the nose is increased by the irregular shape of the peculiar bones and gristle. The mucous lining of this increased surface is filled with small blood vessels, for the purpose of warming the air before it reaches the lungs. Cold air irritates or congests the lining mucous membrane of the breathing tubes as much as dust, hence the necessity of always breathing through the nose.

PACE.

On starting out to ride on a cycle, go slow for a few minutes, gradually increasing until the pace most comfortable to ride is reached, no figures can be given. Some men can propel with as much ease and comfort at a pace of 15 miles per hour, as can others at 7 miles an hour. Whatever pace is taken keep it steady; fast bursts very soon tire, "it's the pace that kills."

PEDALLING.

"What is worth doing at all is worth doing well."

The above maxim should be kept in mind by every cyclist in respect to pedalling. One of the most important differences between a good and a bad rider lies in their respective acts of pedalling. The action of a novice, or of a badly taught rider, usually consists of a succession of downward "plunges" applied to each pedal alternately, and only exerting effective pressure for, at most, one-third of

its total revolution. The expert, on the other hand, maintains the effective impulse during the whole of each revolution. This is partly achieved by mechanical aid, in the shape of a grooved shoe sole, (see shoes,) and partly by a peculiar movement of the foot and ankle, only to be acquired in perfection by long and careful practice. A reasonable amount of proficiency, however, is within the reach of every cyclist.

Thus the one foot will begin to work before the other leaves off, and both feet will carry the cranks over the dead-centres. The manner in which this is achieved is by dropping the heel as the pedal rises near its highest point, and endeavoring to make the toe describe as large a circle, and the heel as small a circle, as possible. When the crank is vertical the heel is dropped that the rider can begin to push the pedal over the dead centre. The toes then begin to move downward faster than the heel. When the crank is horizontal the pressure is directly downward. little further down, the crank having descended beyond the horizontal position, the toes become lower than the heel, and the pressure (or claw) is exerted in a backward direction until the effective point is passed at which the pedal can be no longer drawn backward and upward. As the pedal rises it should not carry the weight of the leg upward, each leg should raise itself alternately, otherwise the rider would be trying to elevate himself.

Effective "ankle-action or "push and pull" will increase one's speed twenty-five per cent Ankle-action may be termed that "push and pull" action which keeps the cycle running between the points when the greatest power can be applied, and the more it is practised the better the results attained, of course some individuals have greater capacity for development than others.

It is the connecting link which transforms the heavy thigh-thrust into the "all-round" action, and which by small exertion, at the right moment, keeps

"alive" the running of the cycle.

American racing men sit more nearly over their work than the English. The advantage claimed are :—the rider's weight is utilised—it is more natural to bring foot forward fast and thrust downward, than to pull fast backward. As to which method should be chosen by the beginner will depend entirely upon the conformation of his lower limbs. Let him experiment for a few days and he will readily perceive to which he is better adapted.

BACK-PEDALLING.

A rider's mastery of his wheel is incomplete unless he has acquired fair skill in back-pedalling. The term is sometimes used as meaning simply resisting with the feet the action of the pedals, and in this shape it is very useful, in descending a hill, to act as a "brake." Back-pedalling, however, means more than this. There are occasions, say, when the rider finds a restive horse in front, or finds that he has slightly overpassed the road down which he should have turned—when the power of running backward for a short distance becomes extremely valuable, and this is effected by back-pedalling—i. e., working the pedals in the reverse of the ordinary direction. To do this gracefully requires some practice, however when once fairly acquired, it becomes, comparatively speaking almost as easy as ordinary pedalling, and is used instinctively when the occasion arises. The time in acquiring it is well spent.

PEDAL SLIPPING.

Pedal slipping. generally occurs at high speed in going up or down a hill without toe-clips. Causes are too long cranks, deficient ankle-action, (lost-head) and misplaced saddle. If saddle be placed too far forward, or tilted too much downward, the weight of the body is too much on handles and pedals, and instead of the light persuasive movement of the foot

that drives the pedal round swiftly and safely, the motion becomes jerky and irregular, and the foot slips off the pedal, often with serious results. Many riders when about to make an effort partly lose their self-control—make a monster impulsive movement of the flexors of the thigh, thereby lifting the foot completely away from the pedal. Our experience has been that pressure applied too forcibly and sudden with a long crank was the most frequent cause.

PNEUMATIC.

Deep dusty ruts should be avoided, and crossed at a good angle. The horse track is, as a rule, the best part of the road, for although the surface may be a little gritty and loose, it is fairly level, whereas the side of the road, though the surface may be better, is wavy, which causes a pneumatic tired machine to bound, and effects the rider's speed and comfort. Of course, there are exceptions, and on some roads the edge is like a racing path. A good easy spring and comfortable saddle are essential. On a pneumatic, one's pedalling is all important, and that is why the change from solid tires to pneumatics makes so much more difference to some men than to others. A solid-tired cycle has a distinct tendency to stop between each stroke, and a heavy, plodding rider can get fairly good results. A pneumatic, on the other hand, flows on ; the momentum lasts much longer, and consequently if a man does not pedal lightly, and use his ankles well, he is counteracting to some extent the natural movement of the cycle, and although he may travel faster and easier on it than on a solid tire, the difference to him will not be nearly so great as to the light pedaller. Patches of stones are not dangerous ; they rarely damage air tires, but single stones should be avoided. Some men are always puncturing their tires ; others do so rarely ; the cause of this difference will be found in their comparative aptitude for

saving their mounts, under such circumstances as above described, as well as in their skill in steering clear of obstacles altogether. A cycle cannot run well with a dead weight on it; the rider should strive to be supple and sympathising; he should sit on his machine as though it were part and parcel of himself; with feet and hands and body he should respond to every movement intuitively; his movements on the machine should be imperceptible to the spectator, but yet effectual in easing his mount over bumps and stones, ruts and ridges; a kind of grip on the pedals with the feet—an imperceptible transference of the weight back and forward from saddle, handles and pedals—a sympathetic merging of one's identity with that of one's mount. Some of our readers may think the game is not worth the candle; that the trouble and attention constantly required to thus humor one's mount would be intolerable. This is not so; with practice it becomes an additional sense, and involuntarily and intuitively one does what is necessary while chatting easily with a companion, or while flying down a mountain pass and enjoying the scenery; once acquired one is able to go faster and easier with less labor and to ride a light machine with safety. A pneumatic should almost steer itself; the handles should be grasped lightly but firmly, and the rider should learn to travel in a bee line.

POSITION.

Position is an important factor in the proper acquirement of the art of cycling, and demands studious attention from the beginner at the present age, when attitudes abnormal in the extreme are advocated by those who should know better. The saddle is placed too far back, the handles too far forward, and too low. Most beginners want a cycle exactly like that of some prominent rider, forgetting that most men are different in physique, and that what suits one man will not suit another. Again,

the racing man only assumes that (semi-circle) position for a brief concentrated effort on a smooth track, whereas the rider who desires to ride for a long time on ordinary roads at a steady pace would be ill at ease in that attitude. The position then, on the cycle should be easy, the saddle at a proper distance from handle-bars and pedals, and the handles within easy reach, with arms slightly bent, when the rider is sitting upright. If the leg position be too short it may cause cramps, if too long strains of the pelvic muscles. The rider should be able to easily touch the pedal, at the lowest point, with his heel when sitting in the saddle; this places the pedal well within his reach and is a safeguard against danger, though it may happen that long experience may enable a rider to shorten or lengthen the reach to suit his own individual fancies to good advantage. In this, as in many other concerns in connection with cycling, the experience of the individual modify and altar, in a marked manner, those arrangements which are found suitable to the majority, so that it becomes obvious that to attempt to lay down any hard and fast rules as applicable to all would be preposterous in the extreme.

POSITION.

The thigh position, which depends upon the relative positions of the saddle and pedals, is the most important, as the lower limbs produce the motive power, and every effort should be made to find out the most suitable position for each individual; keeping in mind the fact that the arms act as an important factor in the driving. So many cyclists find it difficult to ride by reason of the preposterous position of the handle-bars. As indicated above, a position found suitable by a racing man on the track may not answer at all to a road rider, and the beginner should be encouraged to ride with a straight back and nearly upright, the handles being so placed, that, when sitting up, the arms are just bent

and no more,—arms fully extended power is lost.

RESPONSIBILITIES.

A cycle is a vehicle, and a rider has about the same rights and responsibilities as drivers of carriages. The cyclist is responsible for damage caused by negligence, recklessness, carelessness or fast riding. The cyclist must observe the recognized customs of the road in the country in which he is riding. Crowding in on the road immediately on passing a horse is a bad and dangerous practice, also ringing the bell when close to a person, many ladies have been seriously injured by this mischievous habit. Every cyclist should carry both lamp and bell, for his own protection as well as that of the public. Accidents caused by the defective condition of the roads can be recovered for, although, probably, it would be very hard to get a conviction.

In towns where cyclists are allowed to ride on the sidewalks, it is every rider's interest to go slowly, and when meeting a lady to ride off, or dismount and lift his wheel off. To ride at a fast pace on the sidewalk is barberous in the extreme and needs no refutation. Imagine a rider almost flying along the walk and unnoticed a child runs out from a gate. The rider would probably be convicted for manslaughter. It never pays to abuse privileges.

SLIP.

When riding over slippery places, keep a firm and steady hold on the handles, steer a straight course, don't try to turn quickly, and, maintain a constant even pressure on the pedals. Generally speaking it is not the wheel that slips, it is the substance that gives way, the wheel follows it if not kept in an upright position, and in motion.

STONES.

Newly laid metal if at all even on the surface may be ridden over with safety,—in this country

there are generally paths at the side. Steer straight and keep power applied to pedals, holding handles firmly. Loose stones are much more troublesome, and apt to cause injury to tire or rim. The novice will make better progress in passing where there are loose stones if he practices looking at the ground (over which he is about to pass) between the stones, the moment he commences to watch the stones he is sure to run upon them.

SUCCESS.

To the man who is aspiring to championship honors on the cycling path, we cannot do better than quote to him the words of the late Sir Andrew Clarke, M. D., who rose from the ranks to the head of his profession, (President Royal College Physicians, England,) by force of character, and unwearied industry, with a record unsullied in thought or act by a tinge of self-seeking. In his early career in a contest for an appointment on the staff of the London hospital, his rival whom he had defeated remarked " Poor Scotch beggar, let him have it, he cannot by any possibility have six months to live." At that time his life was not deemed worth a year's purchase, yet with strict attention to physical culture he attained a singularly successful career and died at the age of 67. He attributed his success as summed up in the following lines, and although intended for medical students, is equally as applicable to cycling students who have ambitious propensities.

" Firstly, I believe that every man's success is within himself, and must come out of himself. No true, abiding and just success can come to any man in any other way. Secondly, a man must be seriously in earnest. He must act with singleness of heart and purpose; he must do with all his might and with all his concentration of thought the one thing at the one time which he is called upon to do. And if some of my young friends should say here, ' I

cannot do that—I cannot love work,' then I answer that there is a certain remedy, and it is work. Work in spite of yourself, and make the habit of work, and when the habit of work is formed it will be transfigured into the love of work; and at last you will not only abhor idleness, but you will have no happiness out of work which then you are constrained from love to do. Thirdly, the man must be charitable, not censorious—self-effacing, not self-seeking; and he must try at once to think and to do the best he can for his rivals and antagonists that can be done. Fourthly, the man must believe that labor is life, that successful labor is life and gladness, and that successful labor, with high aims and just objects, will bring to him the fullest, truest and happiest life that can be lived upon the earth."

"Man never is, but always to be blest," says the poet. That is, his true happiness consists in the means, and not in the end; in acquisition and not in possession. The principle and source of it is not the gratification of the desires, nor does its amount depend on the frequency of such gratification. He who cultivates a tree derives far more satisfaction from the care he bestows upon it than from the fruit. The pleasure lies in the race, not in the prize.

CHOICE.

In terms of choice I am not solely led
By nice directions of (an agent's) eyes.

In the present advanced stage of cycling, the types af wheels are too numerous, and the public knowledge of their respective advantages too general to make it easy or necessary to suggest in detail the special patterns most appropriate for particular cases.

The choice of a wheelman's mount is like the selection of a horse, in so far at least as it involves a judgment as to the kind or style best adapted to his or her special use; as to the quality of the stock from which it comes, the care and skill with which it has been brought to a marketable condition, and its consequent soundness and durability; but first of all as to the character and business standing of the party selling it.

Every manufacturer presents his own statements as to the particular features and merits of the cycles he offers. We suggest that the most judicious buyer is he who pins his faith to a well equipped house of unquestioned standing; one which has every capacity and every inducement to produce only the best, and which cannot afford to reflect upon its record, or jeopardise its reputation by making one misrepresentation of facts.

The choice of a cycle is a matter of the highest importance. The pleasure of riding depends upon having a suitable mount.

"A good workman always has a good tool." Beginners may find it to their interest not to purchase a cycle until they have learned to ride. In the

course of your novitiate you will probably have ridden a considerable variety of cycles, and the greater the number the better. You will have discovered their good points and their bad ones, and will by degrees get a clear idea of what suits you best. For, be it remembered, there is no absolute best about cycles, and the very point which is a recommendation to one person may even be an objection to another.

Prior to the past two years there were remarkable and radical changes in the construction of cycles. Change is not always improvement, but when, as in this case, the change is adopted by a whole trade, we may be pretty sure that there is some substantial benefit in the alterations, and the experience of riders fully confirms this opinion. In any case, it is hardly to be expected that a new invention should, minerva-like, spring perfect from the brain of its originator.

BEARINGS.

"I know him by his bearing."

Bearings are to the cycle what the heart is to the rider. Without good bearings you cannot have an easy running wheel. Easy running means,—little friction. Little friction means,—little wear.

CHAINS.

Block chain is the best for path or road cycles, as it slips around the cogs easier, creates less friction, is lighter, wears better and will not stretch. On no consideration accept any but the best. 1894 chains show vast improvement.

CRANKS.

"All things by turns and nothing long."

Applied to cycles, cranks have given the best satisfaction as the means of appyling power. Their simplicity and the rotary motion seem to please the

public better than the many levers, stirrups, etc., offered by various inventors in the past. While the lever motion seems more powerful, has a direct stroke and in some cases no dead centre, yet few people seem to find it as much to their liking as the crank, although there is an occasional man who can do better with the lever; the difference being probably in the conformation of the rider.

The verdict being in favor of cranks, the next question is, what shall their shape and length be? Until two years ago a rectangular section fluted on one side, perhaps was considered all right, and another section, was seldom seen. But one day some crank discovered that twisting a piece of steel greatly stiffened it and we had Southward's twisted crank, of very light weight and very rigid. A twisted crank of rectangular section would have looked like a lightning rod, so it was necessary to make them round, and hence the evolution of our present round style. Many round cranks spring too much.

Not that our present cranks are twisted, for they are not. They are of a higher grade steel than has been commonly used in the past, and so obtain their stiffness.

The main point, and one on which the attainment of best results depends largely, is the length of crank. This has been largely discussed and disagreed upon and still the discussion goes on. The reason of this is plain. No two riders are just alike in their action, therefore as they require different length of cranks. This is just as true as that they have different steps when walking. One can lift his feet high with little effort, another cannot, but can push with vigor within his range. Their requirements differ. They will get the best results from cranks of different lengths.

Cranks, therefore, should be made adjustable in lengths so as to meet all requirements, or else they should be made to order. It would seem just as

necessary to have the stroke fit the rider as to have the reach do so. What proportion the length of crank should bear to the rider varies largely with the build of the rider, but, roughly, we would say that one-sixth the leg length, or one-fifth the step length, or one-tenth the geared size of the wheel, would be about correct. Each must determine for himself by trial, and even then a change of condition, as from road to track, would probably vary the result. Adjustable or different length cranks are certainly as necessary as adjustable handle-bars or changeable gears.

Few riders in Canada know what length crank they do use, less know what length suits them best. True, a rider can educate his muscles in time to fairly well manage any length from 4 to 8 inches, and perhaps accomplish fair speed. Nevertheless, consider how much easier it would be, and how much more speed he would possess, had he selected the length most suitable to his physique. Most Canadians use too long cranks and gear too high—certainly long cranks facilitates ankle-motion.

Long cranks is the chief factor in this wobbling or serpentine course so common amongst our riders to day. Each lateral motion creates friction and friction retards speed. Similarly in walking with high heeled shoes many manifest this lateral unsteady motion,—straining muscles; if our Creator had intended that man should when walking have his heel so much above the level of the ball of the foot, he most surely would have created a knob upon that heel the exact length required. We cannot improve on the mechanism of man. Riders should determine what length of crank suits them best before selecting their gear, the former being determined, the latter is easy. Let the rider experiment with various lengths and observe how much steadier he can ride with a short crank than a long one, even with power applied in as great a part of the revolution, how much more comfortable

he can rest upon the saddle with increased ability to place weight on pedals suddenly in emergencies or dismount if danger be nigh.

Again, observe how much more force one can use on a short crank than on a long one, how much more control you have over your wheel.

Another advantage is the appearance is more graceful. Start two riders off together one having a 6in. crank, the other a 6½in., and note the difference in appearance,—the former will appear to be pedalling much easier than the latter, as in reality he is having less friction to overcome from the fact that he sits steadier on his wheel. Six inches ought to be long enough for any one, except a very high stepper.

How often have we observed a lady going down street with a long, slow pedalling motion, her knee, with each elevation of the pedal moving almost up to the handle-bars,—such attitudes are fanatically-euphuistically-ridiculous,—having, perchance a 6½ inch crank and a 56 inch gear—instead of, say, a 5 inch crank and a 44 inch gear, Women are intuitively more adept in the art of pedalling than men.

Much of the ease of riding depends upon the accurate adjustment of little details which the novice passes by as matters of indifference. One of these points—the most important—is length of crank throw. Slight and active persons are usually found to do better work with the shorter crank-throw. When the exact length is found to suit the rider's idiosyncracies strictly adhere to it. Even the muscles develope to suit that particular length.

Carman, Hyslop and Wells, we are informed, use 6½ inch cranks. If the rider will give a little thought to this subject, and apply it, the gain in his speed capabilities will be marked.

FRAME.

"But of this frame, the bearings and the ti(r)es."

Open diamond—rigid—fairly large sized tubing.

The shorter the crank-shaft is the better. The shorter it is the more power the rider can utilize and vice versa. We would prefer to have one two inches only across the sprocket—and believe the time is not far distant when they will be cut down to that length. The Beeston Humber frame is admired all the world over as a model.

GEAR.

"Thus go they both (wheels) together to their gears.

Other considerations apart, and supposing the crank-throw to remain the same and the pedals to revolve at the same rate in each case, there is no disputing that the lower the gear the easier will be the work and the slower the rate of progress, and the higher the gear the harder will be the work and the faster the rate of progress. If the crank-throw be lengthened more leverage will be obtained, and the power will be used to better advantage, so that a higher gear may be used than with a shorter crank-throw; but this theory only applies within certain limits, and the rider will find that he cannot work to greater advantage with a crank-throw of more than a certain length One rule is that the length of crank used should equal the distance from the centre of the ankle joint to a point on the sole of the shoe immediately under the ball of the great toe measuring on the inner side of the foot. We have observed in actual trials that with a short-crank we can propel a wheel in a straighter course (thereby reducing friction) than with a long crank, although pressure is maintained in as great a part of the revolution of the long crank as the short one. From this experiment, our rule is, use as long a crank as you can comfortably without producing the slightest lateral body motion. Length of crank must be determined prior to ascertaining what gear is suitable. Length and conformation of thigh must also be taken into consideration, in order to arrive at a proper conclusion.

When the rider has found out the rate of pedalling and the longest crank-throw that suits him, he will be in a very good position to ascertain the gear which will enable him to go at the greatest pace with the least exertion. As riding on a heavy, weak cycle over rough, muddy, hilly roads, and against the wind, means harder work than riding on a light but rigid one over smooth, dry, level roads with the wind. A lower or higher gear should be selected in proportion as the former or latter conditions are expected to predominate. If a slow motion of the pedals is preferred, a high gear should be chosen; if a fast motion is found more suitable, a lower gear should be selected. Beginners and weak riders should gear low, practised, strong riders usually prefer, or profess to prefer, a rather high gear. But as in the old ordinary days there was a craze for riding the highest wheel one could stretch, so, unfortunately there is at the present time a tendency to gear too high. One may get accustomed to almost any gear, but a high gear strains the system much more severely than a low one, and should, therefore be adopted with caution. More real enjoyment is to be had out of a low gear than a high one, as a rule. A wheel should not be geared double, owing to the strain all coming on one point, we do not think a rider should gear higher than he otherwise would do in order to escape this evil, but should rather gear lower, or accept the double gear and counteract its effects by occasionally altering the relative positions of the sprocket-wheel and sub-chain-wheel by shifting the chain a link or two along the cogs. If this be done regularly and systematically, the damage done by the double gear in a well built machine will probably be inappreciable.

To ascertain the gearing of a given machine, multiply the diameter in inches of the driving-wheel by the number of cogs on the sprocket-wheel, and divide by the number of cogs on the driving-wheel

hub, thus: If the diameter of the driving-wheel be 28 inches, the number of cogs on the sprocket-wheel 17, and the number of cogs on the driving-wheel hub 9, then $\frac{28 \times 17}{9}$ In other words, the cycle above described would be spoken of as 28in. geared to 53 inches nearly, a very good working proportion.

Cycles fitted for changeable sprocket-wheels has many advantages. 60 inch was the fashionable gear in London, Eng., last year.—Too high for general use. The general tendency is to gear too high, to exaggerate and to make a toil.

At the Stanley shew last autumn the most notable feature of improvement was the detachable chain-wheels made so that a wheel with less or more teeth may be quickly substituted when it is desired to change the gear. To the Raleigh Cycle Co. must be given the credit for the introduction of this improvement, and it is the Raleigh principle, varied by "crossing" with Renouf's expired patent, which is generally impressed into the service of the many makers of this useful feature, although there were almost as many such detachable chain wheels made after the plan familiarized last season upon the Humber, the chain-wheel and crank being made in one piece, bolting on to the spindle.

The number of revolutions of the pedal per minute on any gear at any pace varies directly as the pace and inversely as the gear; and if the proportion of pace to gear is kept the same, the rate of pedalling is the same. That is, you have to pedal at the same speed on an 80 inch gear to travel at 24 miles an hour as you do on a 50 inch gear to reach 15 miles an hour, or on a 60 inch gear for 18 miles an hour, or a 70 inch gear for 22 miles an hour, this rate being a fraction over 100 revolutions per minute. This is rather faster than an average rider ordinarily pedals, unless racing or putting forth some extra force. About 80 a minute is a comfortable average pedalling pace, and anything over 110 is difficult.

In order to serve as a guide to a choice of gear we print a table of the number of revolutions per minute for a few of the commoner gears, and possible speeds. It will be seen that the road scorcher whose usual pace is 18 miles an hour, and who gears to 63 inches, has to drive his pedal round 96 times a minute. The average road rider pedalling as fast as with a 54 inch gear, would travel 15 miles an hour, or if, as is most likely, he is content with 12 miles an hour, his feet will only revolve 74 times in a minute. Hence these figures are all in favor of low gear for the average rider. Apart from this, of course, the agile rider, with plenty of knack, without an enormous muscular strength, will be able to pedal fast, and he will choose a moderately low gear, while the possessor of lion's strength without much skill in getting his feet round fast will be better served with a tolerably high gear.

ABLE OF NUMBER OF REVOLUTIONS PER MINUTE.

iles er our.	HEIGHT OF GEAR IN INCHES.							
	50	54	57	60	63	66	70	80
	REVOLUTIONS.							
10	67	62	58	56	53	50	48	42
15	100	93	88	84	80	76	72	63
18	121	112	106	100	96	91	86	75
21	141	130	123	117	112	106	100	88
24	161	149	141	134	128	122	115	100
30	201	186	176	168	160	152	144	126

To go into figures, we should say that 50in. is a w gear, 54in. a good average, and 57in. a high gear r the road. For ladies 5in. less, i.e., 45, 49 and respectively. For racing men 64, 66 & 68. On ard or cement tracks even higher can be used to od advantage. We have ridden a mile 2 seconds ster with a 72in. than with a 64in. gear against igh wind in each case with a 6in. crank. How-

ever, high gears cause great strain on the system and should be avoided. Shorland, the English road or long distance champion of the world rides a cycle geared to 63. A. A. Zimmerman, winner of the English championship path races in '92 and now champion of the world rode a cycle geared to 64in. at Herne-Hill, in America, where the tracks are larger he has used 68. Sanger won the one mile championship last year at Herne-Hill Eng. with a 72in. gear, on a board track. The Canadian Champions gear as follows,—Carman 68; Hyslop 68; Wells 68. American path men gear as follows'—Zimmerman 68; Windle 69; Tyler 68; Sanger 72; Taylor 72.

English path men preferred in 1892 as follows,—Mecredy 66; Edwards 66, Osmond 68, Schofield 68, Harris 68, Adams 68, last year, '93, many of these preferred higher gears. Mr Meintjes of South Africa—50 mile world's champi[illegible]sed a Whitworth geared to 80in., when he rode [illegible]les and 50 yds. at Springfield in the hour, in 1893.

MAKER.

"The universal (safety) maker we may praise." It would be an invidious task to recommend any one particular machine; indeed it is impossible to make any absolute comparison between the cycles of rival makes. Some excel in one particular, some in another. The only safe advice that can be given to a purchaser, is to go to one or other of those firms (and there are many such) who have an established reputation for turning out high-class cycles.

Good material, good workmanship, and careful finish are very expensive, and to get all these at a very low figure is impossible. No firm will make cycles and sell them for less than cost.

> Good workmen never quarrel with their tools;
> Because they always good ones have,
> I've got new mythological machinery,
> And very handsome supernatural scenery.

Cheap cycles are made of inferior material, are

roughly put together, and unfinished in appearance. A good cycle will last longer, cost less for repairs, sell for more, second-hand, than an inferior one. If you buy a cycle from a firm that has a reputation to lose, you may depend on getting a good one.

PEDALS.

Rubber for general use ; rat-trap for racing. If possible get them exact width of shoe or vice versa —it will add greatly to comfort and power in riding or racing—dust proof.

RIMS.

Wooden rims have been tried during the past season and have given good satisfaction. The advantages claimed are that they are only about half the weight of metal rims, stronger, more elastic—hence more durable, resist greater shock, absorbs far more vibration, has more inherent life and go, and will not buckle—notwithstanding, nevertheless, per-adventure, considering all these good qualities, it is possible to break them crosswise or lengthwise.

Second growth white ash is much lighter than hickory, whilst it is equally as strong and much more rigid. One essential is, wood must be properly dried or it will prove to be very brittle ; and also it must be well protected from moisture by waterproof paint or enamel.

We are inclined to the opinion that a combination of metal and wood will produce a better material for use in cycle wheels, than either separately—just as rubber and fabric are better than either alone in the construction of tires. For instance, we find in our experience in the use of conveyances drawn by horses, that a wheel having say ¼in. steel tire and ¾in. wooden felloe, will in time flatten between the points supported by the spokes; whereas in a wheel having, say 1/16in. steel tire and 1¼in. wooden rim with the same banging over stones will by its greater inherent life and go, or elasticity,

retain its rotundity and wear much longer, although only 5/8 the weight.

Most men will choose a heavy rim, thinking that in it they have strength and durability, whereas the very opposite obtains as verified by practical experience. The proportions of each required will vary according to weight of rider, weight of wheel, and smoothness of surface upon which it is to be used.

TIRES.

(See Historical chapter, fol. 18, or cycling literature for latest improvements, etc.,—latest does not necessarily imply—best.)

SECOND-HAND.

Splendid bargains are often to be picked up, but, on the other hand, there is much danger of an old, defective, or maimed cycle being palmed off on one. See thee, that the name of a good maker is upon it. Better far to purchase a second-hand cycle bearing a good maker's name, providing it has not been misused too severely, than a new one having a name but bearing no reputation, however cheap—depend upon it, the cheap wheel will prove to be an expensive one before it is worn out or what is most likely, disposed off.

WEIGHT.

"He throws his flight in many an airy wheel."

Light wheels are a delusion and a snare, looked at from the rider's standpoint. They are costly and do not wear long, for general purpose use. During the past year nearly all road-racers, and path racers were built too light—of course a cycle cannot be built too light providing it be quite rigid, and mere lightness, though it were only five pounds, will never compensate for lack of rigidity.

WHEELS.

The gasping charioteer beneath the wheel.

28 inch equal wheels for good road or path; 30 inch wheels for rough road or path. The objections to large size are—extra weight—not so strong. We prefer a cycle having steering-wheel 1 inch smaller than the driver—as in a buggy we fancy it runs easier. Also that weight of steering-wheel be about ¾ that of the driving wheel.

Suppose the novice wants to purchase a cycle especially adapted for touring, let him consult say three veteran tourists, independent of each other—he will probably not be given the same advice from any two. He will thus be left between Scylla and Charybdis, and he wonders why matters are thusly! Nevertheless. after digesting these opinions his own good judgment will enable him to steer between the shark and the deep sea.

Regular perusal of cycling literature will give the reader all the knowledge he requires as to the question of securing the most suitable and best cycle on the market for his particular purpose.

CARE.

A thing of beauty and a joy forever,
Its loveliness increases, it will never
Pass into nothingness.

The life of a cycle, not less than its satisfactory performance, depends materially on its being kept in good order. Very little time and attention are necessary if it be, but applied at the proper moment. We have observed that the careful, thoughtful, and experienced rider rarely ever, has any mishaps on the road. The reason is apparent, in cleaning his cycle, he will notice any part that is defective. Of course, in the particular care of a cycle a rider's good sense, and a general knowledge in regard to fine machinery, ought to be sufficient; but suggestions arising from experience will save the reader much time and labor.

Treat your wheel as your best friend, and it will always be ready to serve you faithfully.

BEARINGS.

If you would have your machine run easily, last long, and be generally satisfactory, keep the bearings in good order. At least twice a year clean thoroughly, removing shaft and cones, and the bearings of both wheels Invert the cycle, allowing it to rest upon the handle-bars and saddle, being careful to protect these parts with a covering, and injecting kerosene or benzine into the bearings, revolve the wheels until the grit has worked out. We advise this method for cleaning the crank-shaft bearings, the removal of which would be a matter of some little trouble, but apart from this we advise the removal of cones and balls and a

thorough rinsing of same in kerosene oil. It is quite important that the crank-shaft bearings be not allowed to become so loose that the cones are separated, causing the balls to ride upon the edges of the cones, or worse still, upon the crank-shaft. When the bearings are removed and cleaned, an inspection is in order, and if uneven grooves, with small soft spots, can be detected on the cones in the line of travel of the balls, they should not be used again; also if any of the balls are uneven or nicked it will only in the end destroy all other parts of the bearing if again used.

When properly adjusted there should be no side play, neither should the balls click or grit. A thoroughly satisfactory adjustment of the crank-shaft bearings can only be secured by removing the chain.

Vaseline and graphite, or plumbago, have both been used to advantage as a lubricant, and a mixture of both is recommended for bearings when the rider is troubled by the rattling of the balls, and cannot obviate this by proper adjustment or otherwise.

The bearings of a safety cycle are liable to wear unevenly by the pull of the chain. The crank bearings cannot be helped, however, keep them well adjusted; but the irregular wear of the driving-wheel spindle may be corrected by turning the spindle a quarter or half round every five hundred miles ridden. Ball bearings generally are adjusted by a cap screwed in and thus tightening on the balls. In these cases the rule is, turn the screw cap until it is tight, and then turn back a quarter, and in most cases it is just right. The wheel when suspended should revolve quite freely, and when let run down should stop slowly and gradually, and not with a sudden jerk; and should oscillate back and forward, and yet, when the top of the wheel is shaken to and fro in the forks there should be no perceptible amount of side play. Care should be

taken not to over-tighten the bearings, or the wheel will run stiff, and there will be extra friction, and increased wear on the bearings. When the steering wheel is removed, from the forks for any cause, be careful to insert it again with bearing-screw-cap on same side as it is on the driving wheel, or there is danger of it becoming so tight as the wheel revolves in the same direction, that it will injure the parts. Pedal bearings are adjusted in the same way,—loosen nut, screw up cone, and then screw up nut again.

CHAIN.

The value of no other portion of any cycle is so dependent upon good care as the chain. If it be too tight the links will crackle, wear, make the wheel run hard, and wear the chain wheels. If too slack there is a loss of power, it may mount the cogs and a sudden application of pressure as in climbing a hill, is apt to stretch or break the links. A little loose is preferable, provided the rider uses his ankles well. At intervals according to necessity the chain should be soaked in coal oil for some hours, and then equally as long in sperm oil, or any good machine oil. When not very dirty it may be wiped clean, then oil each rivet end, and thence smeared with plumbago or tallow, afterwards it should be wiped dry or brushed. A chain so kept will not pick up dust, will run freely and not subject the rider to any inconvenience. When adjusting it, mark that the wheels are straight in position or the sides of the links will grind against the cogs. To remove it place lock-nut-rivet on top of the sprocket-wheel to facilitate manipulations. In replacing it, do not attempt to screw nut too tight on end of rivet, when fairly tight, a slight tap on the end of rivet, so as to form a burr, will make it more secure. Frequent examinations of this nut may avert serious accidents.

CLEANING.

This is of much importance, both in maintaining the appearance, and establishing the commercial value of a cycle. "An ounce of prevention saves heaps of elbow grease." There is no better time to clean your cycle than upon your return from a ride.

We use open mesh cotton, cheese-cloth, being soft and pliable it is both pleasant to use and effective in its action. Chamois skin being used to finish. The rims about the heads of the spokes should be painted with enamel whenever there is any sign of rust. Parts not nickeled can be cleaned from rust with emery paper, being careful not to allow any to drop into the bearings. Vaseline rubbed over nickelled or bright parts in shipment, or when not in use for some time will prevent rust, and is easily removed. Riding in a rain storm will not injure a cycle, providing it be wiped dry afterwards.

The best way to keep nickel in condition is to polish with a chamois skin ; and when ; as a result of neglect, a slight deposit of rust has attacked it, a little fine whiting, or any one of the best metal polishes on the market, not containing grit or acid, may be used to advantage. No coating for protecting nickel from the atmosphere when stored, has been found to be entirely satisfactory. Nearly all contain more or less oil in their composition, and this, as already said, is injurious if it remains upon the nickel long enough to penetrate it.

Enamel is a favorite finish on account of its resistance to the rust, and the ease with which it is cleaned. It is not, however, proof against every thing, for the rubber in its composition is affected by oil if it remains in contact with it, and salt water, or any acid in solution, or in the atmosphere, will injure it as they would nickel.

To clean the bearings, inject coal-oil freely, keep the wheel spinning, being careful not to allow any to come in contact with rubber tires, as it will

penetrate the rubber and cause the canvas to separate, and then the so-called goose eggs will make their appearance on the tire. When the oil flows out clear, inject machine oil freely. If however, this fails, the balls must be removed and cleaned separately. If not accustomed to do this take it to a competent repairer.

Wash chamois skin with soap and water, and don't rinse the soap out of it. A chamois skin thus treated will dry as soft and supple as when it first left the currier's hands.

CRANKS.

Do not try to lighten a crank key by only turning the nut, strike the key a few sharp blows first to settle it firmly, then turn the nut, being careful not to turn after it is settled against the crank. Keep cranks tight or adjusting-key will soon become worn. To tighten, place a solid block of wood under crank-bars and a few smart blows on the pin with a hammer will suffice, thence tighten up the net.

GENERAL.

When riding always carry oil-can with oil in it, adjustable wrench, inflater and rubber repair kit. It will relieve the rider of much anxiety.

In receiving a new wheel already adjusted, examine it carefully, the carrier may have damaged some part. Again, some dealer's clerks do not know how to adjust a cycle properly.

Verily! how many riders know?

HEAD.

Be particularly careful in adjusting the steering head bearing, for upon it depends that nicety of steering, so essential to an easy running cycle. If the head seems to tighten as the steering-wheel is moved from side to side, the cones are worn, and they must be ground down and rehardened.

LAMPS.

"It will be light that you may see it."

Lamps cause heaps of trouble, unless well cared for. Sometimes the wick is too tight, if so, pull a few threads out. The wick should be changed at intervals if not used constantly. Should the wick become chared and the blaze go out, the oil is too thick. If it should smoke add a little piece of gum-camphor. Lamps are a great help to riders by letting drivers see there are cyclers on the thoroughfare.

LENDING TO FRIENDS.

If you value your machine, never lend it to any one, "and many penitential tears thou wilt be spared." Every cycle demands a certain amount of adjustment to suit the idiosyncrasies of the rider, and the perfection of such adjustment is only attained after repeated experiments. If the borrower cannot ride a cycle—remember, Polonius' advice to Hamlet—

"Neither a borrower nor a lender be,
For loan oft loseth both itself and friend."

Prov. xxii-7, says —"The borrower is servant to the lender." But in this case the very opposite attains—therefore it is wisdom not to do so. If it was Cato's request "lend me for a while thy patience,"—it might be granted.

NUTS.

A forearm movement when using the wrench on small bolts and on most large ones is advisable. It makes less likely the twisting and breakage of the bolts. Should the pedal nut work loose—remove it, clean thoroughly and replace. It may require leather washer or powdered resin.

OILING.

Don't use oil lavishly; enough is as good as a feast. Ball bearings require oil every one hundred

miles ridden, pedals and crank-shaft oftener. If dusty or muddy they may require it every ten miles. Rememember on the safety as built in 1894 there are seven parts to oil. Wheels two; head two; crank axle one; pedals two. If oil is applied in centre of axle see that it reaches bearings—many oil at end as well. Sometimes saddle spring may require oil. Many riders neglect to oil the head. As to oil, any good machine oil will answer the purpose, all reliable cycle dealers will have the proper oil. After oiling, wipe carefully, any that may be spilt on any part as it causes dust to accumulate. Be especially careful not to allow any to touch the rubber tires or remain on the enamel.

PEDALS.

Pedals frequently become choked,—loosen slightly, oil can then be worked in. Clean and adjust the pedals as often as they seem to require it. It is a matter of but a few minutes, and the extra work is fully repaid.

STAND, OR AXLE-SUPPORTER.

For a few cents any rider can purchase the material, and himself make a cycle stand, or axle-support which is invaluable for cleaning upon; or in keeping the tire from being creased when there is little or no air in it; or for winter use.

Given a piece of plank 56in. long; 12in. wide; and 2in. thick. Scoop it out in the middle, on its edges, so that when it lays flat on the floor it has the appearance of a figure 8, only not quite so small in the middle.

Given four pieces of ash ¼ × 4in. and 17in. long. Put two of these through each end of plank, say 8in. apart on a slight angle, so that at the top they will be 4in. apart; almost like legs in a stool upside down, and the stand is complete. Place the cycle upon it. The reason we state to make the upright posts 4in. wide is, because cycles vary

in their length and the stand will then suit any wheel. As to the distance apart at the top of posts that may be more or less than 4in., to suit the length of axle in wheel.

WINTER CARE.

A simple way for storing a wheel for the winter, is—cover with a cotton sheet, and suspend it with a strap. Cover the metal portions, both emanelled and plated parts with vaseline—a thin coat. The bearings should be filled with warm olive-oil, in which a small quantity of vaseline has been dissolved. All nuts, screws, etc, should be anointed in like manner.

TIRE INFLATION.

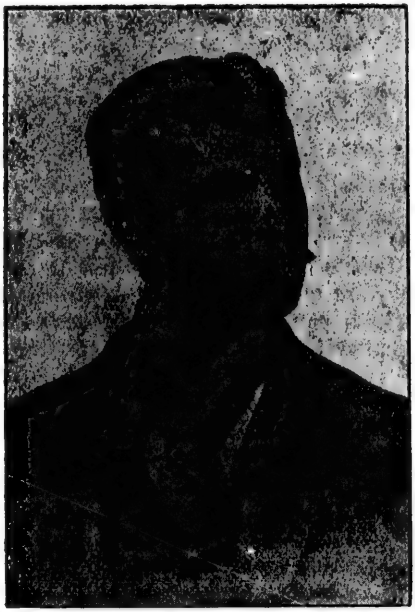
"In posture to explode their second tire
Of thunder."

There is much diversity of opinion as to the degree of hardness which it is desirable to develope in pneumatic tires by means of the inflater. The condition in which different riders maintain their tires shows that popular ideas on the subject vary considerably, for whilst some keep them soft and readily compressed by the fingers, others inflate them to such an extent that it requires a great effort to indent them appreciably by the same means. It has been satisfactorily established by practical experience that a hard pumped tire is less liable to puncture than one that is only partially inflated. It is difficult to account for the more yielding material getting pierced with greater readiness than that which offers an increased resistance to penetrating substances. As might be expected, the correct degree of inflation will be found to be somewhere between the extremes of softness and hardness mentioned above. An unduly soft tire is liable to be compressed when meeting an obstacle, to an extent which causes the material of which it is composed to become impinged between the road

and the rim, when it is very liable to sustain injury. On the other hand, the advantage of the air tier is greatly reduced by excessive inflation, its elasticity being thereby diminished. For instance, given sufficient strength in the canvas linings, a degree of hardness could be obtained by a powerful inflater, that would make the tire as hard as a board and only in the smallest degree susceptible to the pressure of the rider's weight in riding. The advantage of the pneumatic tire would thus be lost, and the inequalities of the ground severely felt.

For track racing purposes, tires may obviously be pumped up harder than is desirable for road work; but the limit is often exceeded by those who do not reflect that the usual racing tire cannot resist the same pressure as one designed for use on the road. On good roads very hard tires are more speedy but less comfortable than those which yield appreciably to the rider's weight.

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MR. H. B. DONLY, SIMCOE, ONTARIO,

SECRETARY-TREASURER C. W. A.

EDITOR OF "THE CANADIAN WHEELMAN,"

Official organ of the C. W. A.

REPAIR.

My wheel is out of joint! O cursed spite!
Now, where to find the man to set it right?

Under this heading, while in a few cases the suggestions may be of value to the ordinary machinist, we merely endeavor to point out to cyclers, some accidents which have happened to our knowledge, and the means best adapted to their temporary repair—they are mainly intended to cover the slight repairs which can be done by persons of no great mechanical skill, or serve to make possible the continuance of a ride until better facilities are at hand.

BEARINGS.

Should a ball break, the pieces must be removed as soon as possible. Two balls removed from a bearing will have no apparent ill effect. Should the adjusting cone become loose, drill a small hole through the case and just mark the bearing, and insert a screw. However, unless very far from a reputable repairer better not attempt this operation. Novices will probably find some difficulty in replacing balls in the bearings. By placing them in position imbedded in tallow, it will tend to expedite operations. In some cycles a pasteboard washer will hold the balls in position whilst the bearings are being tightened. In tightening lock-nut on the bearings—be exceedingly careful or you will crack the cone or bearing-cup. This is T. B. McCarthy's method.

CHAIN.

When the chain breaks, if it be a rivet, replace

by iron wire, if the side of a link, make a new one out of sheet iron. Be careful to properly head the rivets again, and do not ride very fast until you get a new chain. This is a practical example as to how a cheap chain (in a cheap wheel) may cause trouble or a serious accident. Every rider that does any fast work at all, should always ride a high class wheel, from a firm having a good reputation.

CRANKS.

If only slightly bent, leave alone, if so much that it will not work, probably you may find a plow or some other implement that you can insert it into and cautiously straighten. When you complete your trip, if it be detachable take off, and straighten in a vice after having heated it.

Should a crank become loose, place a solid piece of wood beneath the crank-bars and give it smart blows with a hammer. See that it is not tight on the edges; it should only bear on the flat sides. Put a piece of thin sheet steel between the key and the crank, before driving in the key. Whilst doing this, place a weighty substance against the other end of axle.

DENTS.

Dents in tubing cannot be entirely removed, although the condition may sometimes be improved. On the whole it is better, unless the dents are such as to effect the strength, not to attempt to take them out. A neat plan is to fill up a dent with solder, file smooth, and touch up with paint or enamel.

FRAME.

When the frame is broken, apply splints and bandage; or use wire or cord in place of cotton bandage. Another method is if tube be hollow place splint inside, and use cord or bandage between either extremity to hold them together.

When the frame is merely bent as is usually the case, we have straightened them by placing wooden supports beneath (after laying the cycle on its side) and applying pressure above with our hands. Better send it to the factory, for should it be the slightest out of true there will be undue friction on some part.

HANDLES.

Rubber, cork, horn or wooden handles, may come off. Warm the bar, apply tire-cement and replace.

HANDLE-BARS.

If bent slightly leave alone until you arrive home. Heat at a forge, being careful not to crush the tube in straightening it. Steel tube is easily bent one way, but to bend it back again will probably crack it. Should it be broken off—splice with stick and copper wire.

KEY.

If the crank-key slot in axle becomes worn, and you possess some mechanical skill, file new slots opposite the worn ones. There is little danger of weakening the shaft to a harmful extent.

PEDALS

Sometimes pedal pins are bent so much that they will not revolve. Straighten by inserting pedal through a gate or farm implement remembering it is possible to break it. Another method is remove the pedal, and ride with pin alone. If the distance be not very great, pedal home, using one only.

Remember the pin is hardened in places to form bearing surfaces.

REFINISH.

To refinish as originally sent out is an expensive

operation. The entire cycle must be taken apart, including taking down the wheels, and the finish of each part carefully renewed. An operation that we can hardly recommend having done, unless the owner is prepared to pay what it is necessary to charge. A frame or any of the detachable parts can easily be refinished at a fair rate.

RIMS.

A solid rim badly bent can be straightened so as to give fair satisfaction, but all the spokes must first be removed, and the rim hammered on an anvil. Naturally this can only be done with considerable labor, and proportionate expense, and it is a question whether it does not pay in the end to get a new rim.

SPOKES.

Should two be broken, leave alone, if more remove one or more from the opposite side and insert into broken side, that is, should the spokes be easily detachable. However, if road should be rough or distance great, it might be more profitable to purchase a railway ticket, or hire a farmer's horse, than to do permanent damage to the rim, or break more spokes. Be very careful about tampering with broken spoke end in hub. If at rim end wire may be used looped in centre to broken spoke, then put a stick through this loop and tighten, tying this stick to adjacent spokes.

SPRINGS.

When the spring breaks, fill the centre of saddle with wood or cloth and bandage firmly all around.

TIRES.

Always get maker's pamphlet with cycle, having directions how to repair.

WHEEL, (BUCKLED.)

Place on its side, pull up on those parts which

are bent down, and press down on those that are bent upwards. It will generally suddenly fly into place again, Should it not come back to place, don't ride it, but send it to the factory to be turned.

WHEEL, (COG.)

Sometimes the cog-wheels get out of line. Send to repairer.

WHEELS.

If on spinning a wheel it is seen to wobble "it is not true." Revolve the wheel, at the same time hold a piece of chalk steadily close to rim, the marked parts, are the projecting parts. The remedy consists in loosening and then tightening spokes, and finally seeing that all have the same tension. Should the end of a spoke bear against bottom of hole in hub, it will break. Better send wheel to a repairer having a good reputation. At the manufactory, setting up and trueing wheels is assigned to mechanics of more than ordinary skill, therefore an attempt by a rider to do so, is unwise, to say the least, and apt to do considerable injury.



W. M. CARMAN,

Canadian Campion 1891; Road Champion of Canada, 1892 and 1893; Holder of all Canadians records from 6 to 25 miles inclusive.

RACING PHYSIOLOGY.

Physiology teaches that in cycle-racing breathlessness is caused by the formation of an excess of carbonic acid in the blood and tissues, which carbonic acid is derived from the combustions necessary to produce and continue muscular movement; that the amount of carbonic acid formed is in direct ratio to the amount of muscular work done; that the intensity of the breathlessness is in direct ratio to the amount of carbonic acid in excess in the system; that the amount of carbonic acid necessary to cause breathlessness differs in each individual, according to the power of elimination he possesses—those persons having a large elimination power, and being able to get quit of a larger quantity in a given time, than those having a smaller capacity, are consequently able to do more work with less distress; that when production and elimination are balanced during any exercise, an extra effort, especially one affecting the respiratory muscles, will quickly cause a greater accumulation of carbonic acid, and resultant breathlessness; that "brain worry" during exertion causes a great and rapid increase of carbonic acid; that breathlessness once established, the cause producing it act and re-act on each other, so that the only method of relief is cessation from, or diminution of the exciting exertion; that carbonic acid being so volatile, a very short relaxation of excessive exertion is sufficient to restore the balance of production and elimination, and allow the individual to continue his work.

The other waste products, such as uric acid, lactic

cid, etc., which are found in the muscle substance during exercise, are excited very slowly. They do not begin to appear until about three hours after the cessation of the exercise which produced them, and continue being eliminated for about 18 or 24 hours. As long as they remain the muscles are impaired by reason of the coagulation of the muscle plasma fluid) by the various acids formed in it. Hence it is wise for a trained man to take a day's rest before an important race in order that he may start with his motor organs unaffected by the products of their own decomposition. Young men should also be careful not to do too much work. Their tissues are less stable than those of a full-matured adult, and the energetic combustions that take place therein leave "cinders" which may easily effect the whole system. When a man is trained his reserves of fat are burnt up, and the material necessary for the combustions that maintain his vital heat and permit his energetic exercises are derived mainly from his food. Hence a man "trained fine" must feed well and generously, or else his essential tissues will be used as freely and he will rapidly loose weight and become "stale." The acquisition of "style" is an important factor in any athletic exercise. A man who practices any muscular action soon gets the "knack" of accomplishing it with the least expenditure of force, and consequently with the least production of waste material. This "knack" in all athletic sports is known as "good style," and the man who runs or rides in the best style is generally under equal physical conditions, the best performer —a good example of this fact is "ankle-action" in cycle racing.

The man who has compassed the distance of a race in good style has expended less effort, and, therefore, commences his final spurt with his system less intoxicated by its own waste, and consequently wins easily.

In the brain, in which the stimulus is generated,

as in the muscle which is stimulated, work is accompanied by evolution of heat, and to a working brain, as to a working muscle, more blood is conveyed. This has actually been seen in the human subject when the brain has been exposed by accidental injury of the skull. The blood-vessels of the organ have been seen to fill up and become congested while the person was making some mental effort, and to empty themselves when it was over. The same kind of combustions also are necessary to carry on mental work as muscular. Hard brain work will cause an increased quantity of waste material to be formed, and this waste is taken up by the blood and excreted by the kidney and other organs in the same manner as the muscular waste we have already made mention of. Brain work does not cause breathlessness, and its work is probably carried on by the combustion of nitro genous elements. We do not lose wind by hard study or intense worry unaccompanied by muscular exertion, but we find an excess of urates, uric acid, and phosphoric acid excreted. Gout is caused by an excess of uric acid in the blood. (Did you ever know a cyclist to have gout?) A gouty person, apparently in health has some mental worry, or does some hard intellectual work. The combustions necessary for this brain work throw an excess of waste uric acid into the blood, and the next day he is in bed with an inflamed toe. Thus there is a great resemblance between the work of the brain, and the work of the muscles, and between their effects on the general economy.

The brain generates the impulse which excites the muscles to contraction. The activity of the brain depends on the quality of its blood supply. Overheated blood laden with carbonic acid, dulls the brain and blood to full of the products of waste can cause insensibility or convulsions. Any organ, or part of organ, that is not used "atrophies" or diminishes in size. If the grey cells in the brain

which control the work of the mind rather than that of the body be injured or diseased, mental weakness —insanity—is the result. The spinal cord is, so to say, the go-between the brain and the nerves. Its principal function is to convey the command of the will from the brain, where it originated, to the particular nerve whose office it is to deliver it to the muscle which performs it. These grey cells are purely motor. They have no intellectual functions, and cannot originate impulses, but they can "reflect" sensations. If you gently tickle the foot of a sleeping person, he will draw it away without awakening. The brain does not direct this movement, for it is dormant. What happens is that the sense of irritation from the tickling was carried up a sensory nerve to the grey matter of the spinal cord, and then the grey cells changed the sensory impression into a motor impulse, and "reflected" it down the nerves supplying the muscles of the leg, causing them to contract and withdraw the foot from the irritating influence. This is called "reflex" action, and is accomplished entirely without the intervention of the will and in many instances quite unconsciously. An exercise frequently repeated leaves a permanent impression. A man learning to use his ankles in pedalling a cycle at first has to remember and exercise his brain each time he wishes to drop his heel at the top and raise it at the bottom of the stroke; when after long practice, he does it unconsciously, unaided by brain influences at all. The contact of his foot with the pedal causes the whole series of muscular movements; they are governed by the automatic centres of the spinal cord, and not by the voluntary action of the brain. Emperor Commodus in ancient Rome experimented for the edification of the populace. He let loose ostriches in the circus, and when they were at full speed their heads were cut off. They did not fall at once, but continued running until they reached the end of the arena. He thus exhibited to them the auto-

matic and reflex actions of the spinal cord.

The brain originates and determines the rhythm of a movement, and after a time delegates its power to the spinal cord; it little by little loses its interest in the performance of the action, and only comes into play when some new and peculiar circumstance demands a change in the direction, the energy, or the movement. Hence actions thus performed cause less fatigue than those when brain activity is required.

RUNNING.

The first and most obvious difference between cycling and walking in Canada, to-day, is that to run, say, one mile involves a very much greater muscular effort than to cycle the same distance. The reason for this is apparent. In running, at each stride, the whole weight of the body has to be lifted from the ground and projected forward seven feet or more by the energetic contraction of the large muscles of the legs and thighs. In riding a cycle the whole body is supported on the saddle and pedals, and though the poundage of the cycle ridden has to be added to that of the rider in order that we may calculate with accuracy the total weight to be propelled. Still both are driven at a much faster pace with a much smaller expenditure of muscular effort. A very simple experiment will convince anyone of this fact. Let him take a man on his back and carry him 440 yards against the watch, and the next day mount him on a cycle, with his feet on the pedals, and push him the same distance comparing afterwards the times accomplished and his own sensations on the two occasions. The leg muscles notice the same difference if they have to carry their owner a mile on foot or propel him a mile on a cycle. We have often experienced in the days when we used to run foot races, for a few days after we would "feel it in our arms" sooner than in our legs, and were stopped

n our early runs more by muscular fatigue in our pper than in our lower extremities. The amount f waste produced after running a mile is greatest. One mile ridden on cycle 640 grains urea were ex-reted. One mile on foot 680 grains urea were ex-reted. After the ride we were fairly fresh, after he run we were quite exhausted.

The second difference is: a cyclist can win cham-ionships at all distances. The same man may be hampion at ¼ mile and also at 50 miles. In unning this is impossible, and there are several ood reasons why it should be so. The actual phy-ical conformation differs. The sprinter's move-ents are quick and sharp. His muscles of loco-otion, therefore, act on short levers. The muscles f the front of thigh, and the calf of a 100 yard unner, are developed to a much greater extent than he same muscles in a mile runner. The shorter he lever the greater the power necessary to work , and, therefore, the greater the bulk of the mus-les which act on it.

In a distance runner the strides are not so fre-uent, and the movement is more deliberate, there-re the muscles, acting on longer levers, which do ot move so rapidly, are, in consequence, more ender. In the sprinter the heel bone is short, nd projects but a small distance behind the ankle one. They act at a great disadvantage through the hort heel bone, and, therefore, are very powerful. he same obtains with the great extensor muscle front of the thigh. It has to bring the whole leg ery quickly forward at each stride, so it is inserted to the shin bone very close to the knee joint, and r the reason stated above, is largely developed. he leg of a distance runner is exactly the opposite this. The levers are longer, as the movements e more deliberate, and consequently the power or uscular development is less. Men, like horses, n in all shapes, and the above is the general rule, d, of course, exceptions are to be found, but they

are not numerous. In addition to this, the chest capacity of the distance runner has to exceed that of the sprinter, because the long continuance of the great exertion throws an enormous amount of carbonic acid into the system which has to be eliminated during the race itself.

The sprinter during the 10 seconds in which he runs his 100 yds. forms much more carbonic acid than the miler covering his 66 yds. in the same time, but his work is over at once, and he can regain his "wind" at his leisure while the other has to go on for 25 times as long, and get quit of air poison as he goes. Therefore the heart and lungs of the miler are stronger. If a sprinter ran a long distance slowly several times he would soon become slow; and conversely, a miler who practised nothing but sprinting would never "stay" home over any distance beyond 440 yds. An expert can distinguish at once by their movements. The sprinter's arms and legs are much more energetic, ease is sacrificed to speed. The miler "keeps himself together." In cycle racing the action is the same for one mile or for fifty, and the difference in pace is not so marked. In foot racing air resistance is less, there is smaller surface presented and the pace is slower. The brain is occupied merely by giving energetic stimuli to the physical process of muscular contraction and less waste products are thrown into the system. The practical result is that the "pacemaker" and the "waiter" commence their final efforts under more equal conditions than those which obtain in a cycle race, and a much smaller degree of superiority in the leading man enables him to "run the sprint out" of his opponent, and win, even though that opponent be the speedier at a short distance.

WALKING.

Almost every one has at some time or other observed when walking beside a fence just about the

height of the eye how everything on the other side of the fence appeared to be bobbing up and down, and, of course, every one who has so observed is well aware that the apparent bobbing up and down of the landscape is caused by the actual bobbing up and down, the rising and falling of the eye of the observer.

To illustrate, take a man whose legs are three feet long and whose stride is two feet, six inches. If these dimensions are laid out with a scale of parts it will be seen that the eye and consequently the body of the man is three inches lower when the stride is taken, than when the feet are passing each other in the act of walking. Owing, however, to the elasticity and physiological construction of the human frame probably the rise and fall in reality is not anything like so much as three inches. Let us then (to be on the safe side) take a rise and fall of one inch as the basis of our calculation. Now, let us suppose that our man is walking at the rate of four miles an hour he consequently does one mile in fifteen minutes, and therefore, the fifteenth part of one mile (352 feet) in one minute, and as he covers two feet, six inches at each stride, he therefore takes, when walking at the above-mentioned rate, nearly (41 strides per minute) as he has to raise his body one inch for each stride that he takes, he will, therefore, in one minute raise his body up a perpendicular height (one inch at a time) of 141 inches, which is nearly twelve feet. Let the weight of his body be, say 150 lbs., he has, therefore, to do $150 \times 12 = 1{,}800$ foot pounds of work per minute; and it must be remembered that this work does not cause him to progress in the least, it is simply work which has to be done to make our mode of progression possible.

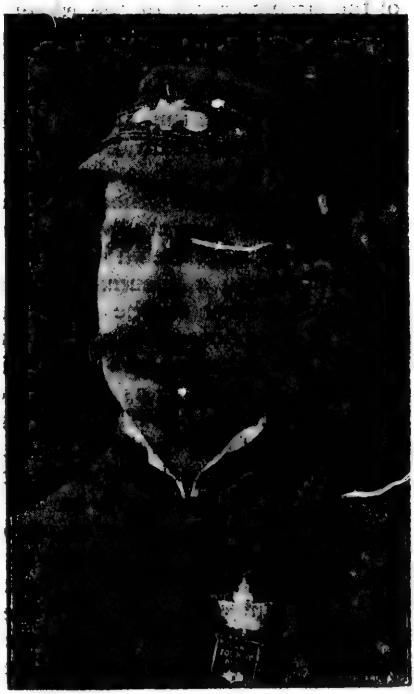
In all calculations of whatever kind we have a standard to calculate by. In calculating concerning power the standard is what is called a foot pound, or rather the unit of the standard is called

a foot pound—that is, the power necessary to raise one pound one foot high in one minute. A horse is supposed to be equal to or capable of doing 33,000 foot pounds of work—that is, he is supposed to be able to raise 33,000 pounds one foot high in one minute. Now, if the 1,800 foot pounds of work our man does is divided by the 33,000 of the horse we get the part of the horse power which the man is doing in raising the weight of his body each minute, this in round numbers is the 1/20 of a horse-power. Now, if the strength of say ten men is equal to that of one horse, it follows that a pedestrian when walking at the rate of four miles per hour, expends half of his whole power in the mere effort of elevating his weight, which effort, as we have already remarked, in no way helps him to progress. This great but necessary expenditure of power in walking, or, at least, the greater part of it, is avoided in riding a bicycle, and, therefore, the whole, or nearly the whole, strength of the rider can be utilized in causing the bicycle to progress.

PNEUMATIC VS. SOLID TIRES.

Many have been the attempts to explain the reason of the high pace of pneumatic tires upon the track, where there is little or no roughness, and the improvement cannot be set down entirely to the absorption of vibration. A point which has not been commented upon in any of the notes and paragraphs dealing with the subject, is the "draw" of the driving wheel tire in front of the point of contact. In order that this draw may be appreciated to the full, let anyone interested in the subject make an experiment somewhat after this fashion. Get a friend to ride a solid (or cushion) tired safety, without fastening the driving wheel tire into the rim with cement, or wire, or in any way whatever. Then notice his tire as he rides, cautioning him to take care to steer well, and ride steadily, so as not to dislodge the tire from the rim. When

he rides slowly, on the level, with a minimum of exertion, or when the machine is running freely, you will observe that the portion of the tire for a quarter of the circumference of the wheel in front of the point of contact is hanging loosely, away from the rim. When he begins to drive, whether for speed or for hill work, that portion of the tire will be drawn tight to the rim, and be as firm as if glued to it. The driving strain stretches this part of the tire. Now, this stretch is counteracted in a solid tire when cemented, or otherwise fixed into a rim, because the tire is held at all points, and there is no opportunity for it to stretch lengthwise in the rim. But it is not so in a pneumatic. The outer cover is, as it were, loose on the air space, it has facilities for stretching fore and aft, so that when driving force is put through a pneumatic tired rim the same action goes on as is observed in a loose solid. The outer cover of the tire is drawn tight for the quarter of the circle that is about to touch the ground, so that each portion of the tire is thinned out, as it in turn comes to be the part in contact, which practically amounts to withdrawing resistance. Instead of the wheel climbing over a swelling, it runs down to a compression at the point of contact. A careful observer will notice that a pneumatic tire, when plenty of driving force is going through it, is actually drawn tight as described above. The matter is not one of pure theory, but of observation first, and of theory afterwards. pneumatic pace is observed to be high; this "draw" is observed to exist; and the theory is an attempt to show that the two observed are related and the facts remain if the theory be right or wrong. In a cushion where the proportion of air space to rubber is less than in the pneumatic, the stretch to draw seems to collect the rubber into a lump in front of the contact point, the rubber not giving way so readily as does air in the pneumatic.



DR. P. E. DOOLITTLE,

CANADIAN CHAMPION TO 1882,

OFFICIAL TIMER C. W. A.

HOW TO GET WIND FOR CYCLING.

It is said that some athletes are, to use a common phrase, "blowers" by inheritance; whilst many are blowers from insufficient development of the organs of the chest. As to the former class we do not pay any attention; as to the latter we shall very briefly prescribe a remedy. There are few circumstances in life that tend to make a man so thoroughly dissatisfied with himself as to perceive after a brisk spin on his wheel that he is puffing and blowing like an artisan's bellows, and almost breathless, while his lower limbs are as strong as a lion's. What adds to his chagrin is the fact that his companions though of a thin and wiry build they do not manifest any marked distress, but on the contrary, apparently enjoy the exercise of cycling. What then is distress for want of wind? From information gathered from the current literature of the day, we would almost be persuaded to credit the assertion that small lungs and poorly developed chest were the causes,—this is incorrect.

The causes are easy to find. The lungs from insufficient expansion (for most individuals, unless when undergoing some exertion, breathe shallow,) never acquire their highest point of power, which point can be easily attained by long continued practice in regular daily inflation as hereinafter described. When any organ is duly exercised it increases in size; and small men with daily cultivation of proper breathing and chest exercise can become just as long winded as large men.

Just as catarrh of the throat would be almost unknown if every one would acquire the habit of pro-

per breathing, and take sufficient cycling exercise daily to bring about a gentle perspiration. This would tend to keep the skin active and in health, thereby relieving congestions and catarrh. Under moderate, sensible use the respirations is not increased (as many teach), but simply deepened; the heart beat is slightly increased, and, the blood by these means and the alternate contractions of the muscles receives a larger proportion of oxygen, and is more evenly distributed over the body, preventing catarrh, congestions, and all such kindred diseases.

Once for all let me here entreat! keep mouth closed, and breathe through the nostrils—nature's channel, when riding, and at all times as well. If not you may inhale flies, dust, germs, etc., which often descend into the air cells and cause irritation of the passages, and sometimes serious complaints.

By the term "How to get wind for cycling" is meant the capacity of pedalling without becoming distressed on account of lack of breath. This does not depend on a large lung capacity as shown by the spirometer, for frequently men who can make only average or even small records on this instrument, have the greatest ability in this we are describing. In lack of breath it seems we cannot get air enough into the lungs; however, that is not the real difficulty—there is nothing to hinder us from breathing as deeply and frequently as we wish.

Consider the internal picture of a man pedalling rapidly. The large and powerful muscles of the legs and thighs are contracting with great force and frequency; revolutions are made 96 times a minute.

This is the scorcher's usual pace who uses a 63in. gear and pedals 96 times a minute and completes 18 miles per hour. About 96 a minute is comfortable average pedalling pace and anything over 120 is difficult. This active pedalling forces a large amount of blood up toward the heart; this organ almost immediately commences to work rapidly and forces the blood into the lungs. This is not done at first

as rapidly as the blood is brought by the veins from the muscles, so that the blood is backed up somewhat in the great veins. The capillaries in the lungs all dilate to accommodate the extra blood that is being thrown in by the heart. These capillaries as they dilate, take up room that is usually occupied by the air in the air cells. Thus, at first there is actually a little less room in the lungs for air than usual. The blood is commencing to go through the capillaries more rapidly than usual, and not quite so finely divided, as the capillaries are larger than usual. All these factors assist in the general condition of lack of oxygen. At first more blood is sent from the muscles to the heart than is sent from the heart to the muscles. After a varying length of time, depending on the vigor of the heart and lungs, these organs recover their balance. The temporary congestion of the lungs is relieved. The heart gets to working rapidly and forcibly enough to meet the need. The capillaries in the lungs are enabled to contract a little, so that the blood is more thoroughly oxygenated. And now second wind is established, and all goes smoothly until the muscles are exhausted. It will be observed that soon after commencing to pedal the legs or thighs seem to become exhausted, but when "second wind" is established they are quite fresh and good for a long run—owing to the causes mentioned. Until the heart and lungs become equal to this work, the legs will not have the kind and quantity of blood needed; hence the products of muscular work will accumulate in the muscle, and it will be tired. As soon as the blood supply is perfected these materials are washed away, and the sense of fatigue goes with them. "Second wind," then, is attained when heart and lungs get to working evenly and regularly, oxygenating and regulating the blood supply. When either the heart or lungs or blood vessels are in poor shape this will be impossible, and the first thing to be done for such a per-

son is to build up the weak part. How is a person to secure the ability to get the second wind surely and quickly? Take plenty of sleep, moderate quantity of good nourishing food that you find agrees with you, avoid all appetizers, tobacco, liquor, worry, mental exertion, too little or too much physical labor. Take as much riding time daily on your wheel as you can, without effort, never ride indifferent or slow, always strive to acquire an easy position and go as fast as possible without making any great effort; also do this not some days, but every day. A man might as well try to eat enough in one day to maintain his system a week as to think a run every second or third day will grow his heart muscles into condition. It is a mistake to make a great effort every day, as every great effort takes some out of a man, just the same as every time you shake the tree a leaf falls—so much nearer its autumn. Attention to these will strengthen the heart so that it can do the necessary work, i. e., providing he already has a good large heart, inherited or acquired through many years of moderate exertion. It is possible for a man to so accustom himself to this work that he will hardly be conscious of any change from first to "second wind," it seeming as if second wind came first. This indicates a fine condition of heart and lungs. It is an excellent practise before any race to breathe deeply for a few minutes. This not merely removes the contaminated air from the lungs and fills them up with fresh air, which is in itself of great importance, but it stimulates the heart itself to commence working a little more rapidly and vigorously than before. Thus, the rider's internal machinery is already tuned up to waltzing pitch and he can if necessary start at the given signal and maintain a very fast pace "all through" without being as much distressed as a rival not thus previously prepared.

During youth the blood vessels are very elastic

and are capable of sustaining great pressure with impunity, as age advances they gradually loose their elasticity with a tendency to become rigid and finally in old age they are almost brittle, (the same may be said of bone.) Therefore, the youth can put forth greater "brief supreme efforts" or "bursts of speed," or "explosions of nervous force," than an aged person. Of course some individuals by hereditary predisposition or their own idiosyncrasy are as old both mentally and physically at 25 as are others at 45 and vice versa. Every cycler should easily retain his "supreme fast burst of speed" until 35 or 40, and his speed capabilities until 50 years of age; providing he has not abused his earthly tabernacle, and has lived a life of "temperance in all things."

To leave off training suddenly, or to refrain from taking exercise, after having been accustomed to do so, is, if any difference more injurious to a man, than trying to get "fit" too rapidly. Scores of athletes are injured in this way every year.

We do not believe that an athlete can develop his wind and muscle capacity in one year, or two years to the highest point possible inherent in his power; although physiology teaches that in a less period of time than two years his body is entirely changed or renewed. From ten to twenty years would be a good average time.

In our opinion, if Mr. Hanlan (probably the greatest among "scullers") had practised—had rowed a reasonable amount every day or better twice a day for 313 days in each year, for ten years, without making any great effort except only if needed in actual racing, on some water in a climate compatible with the exercise, and not on a machine in a close stuffy room, his capabilities would be vastly superior to what they are, and honors, undreamed of, be yet his. And so of cycling.

True an athlete can with careful preparation become fairly proficient in any sport in a few month's

time, providing the natural ability is his to do—still that is not a full criterion as to what he is capable of doing. This is a progressive age—a fast age, in which we live, and men go too fast through life and observe too slow. Men work too fast (not all) and reflect too slowly or too little. Men strive to reach the top of the ladder in too great haste, and in so doing miss a step, and drop back two just as the cycler who when going at a winning pace slips his pedal and by it the prize slips from his grasp. A slow, constant, progressive training method is always productive of the best results.

In the process of training, the getting wind, as it is called, is largely a gradual increase in the capability of the heart, particularly of the right chambers. A degree of exertion can be maintained in full training which would be quite impossible under other circumstances because by a gradual process of what we may call physical education the heart has strengthened its reserve force—widened enormously its limit of physiological work. Endurance in prolonged contests is measured by the capabilities of the heart, and its essence consists in being able to meet the great strain thrown upon it. The changes actually brought about in the heart is increased muscular and nervous energy. The large heart of athletes may be due to the prolonged use of their muscles, but no man becomes a great runner or cyclist who has not naturally a capable if not a large heart. Master McGrath, the celebrated greyhound, and Eclipse, the race-horse, both famous for endurance rather than speed, had very large hearts. The heart of the former weighed 9.57 ounces, just three-fold in excess of the normal proportion of heart weight to body weight.

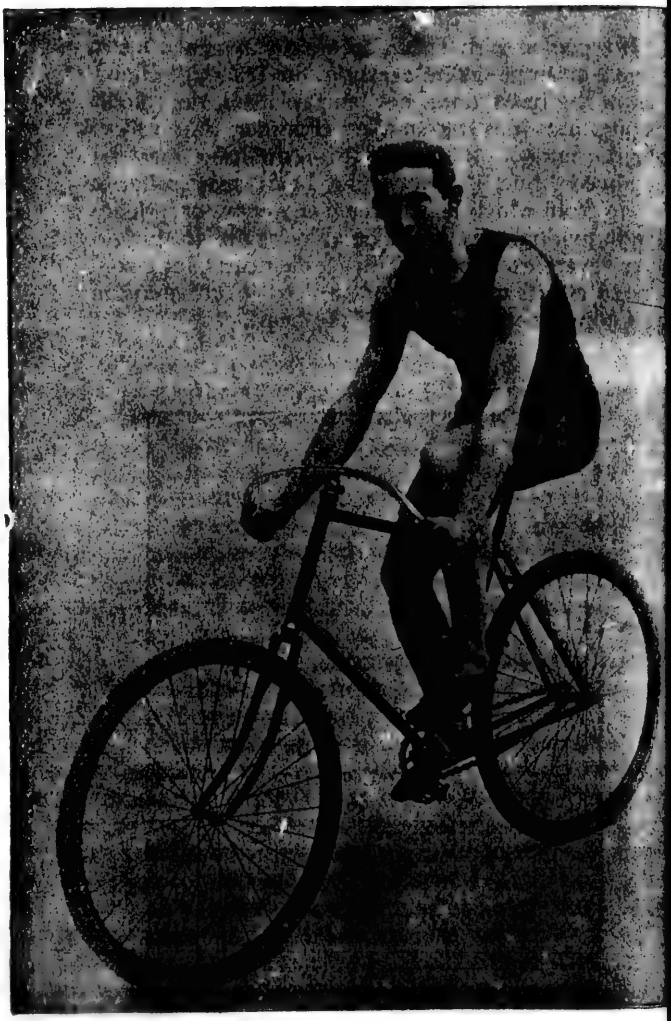
We have frequently treated boys and girls with feeble hearts by prescribing a bicycle to be taken in judicious discretion with glorious success, after they had been told by older practitioners that for them to use a bicycle meant dissolution.

If a person with small, feeble or untrained heart should attempt severe exertion, the left large chamber of the heart does not empty itself, the blood regurgitates into the smaller chamber, thus relieving the lungs. With rest this condition may be removed; but, if severe, the heart may suffer a strain from which it may recover slowly, or indeed, the individual may never be able again to undertake severe exertion. With feeble hearts, long continued efforts may cause death by overdistention and consequent paralysis of the heart.



E. C. HILL,

EX-PRESIDENT C. W. A.



G. M. WELLS.

CANADIAN CHAMPION, 1892.



MUSCLE.

The muscles of man require to be educated, or trained in order to bring them into the highest possible state of fitness for action and endurance.

There are a great many ideas in regard to the subject of muscle, which, although apparently a variance, are really in accord with each other, the difference in many cases being that different powers are referred to; thus what is referred to many times is the capacity of exerting great power for a little while, at other times it is the power of making a smaller series of exertions through a longer space of time. Some individuals have one kind of muscle to a marked degree, who have not the other. There are three important elements that enter into the composition, or which determine muscular strength: nerve, muscular tissue, and circulatory apparatus. We name them in the order of importance. Nerve is the battery that sends the discharge that occasions the contraction. No matter how strong a muscle is, it cannot contract strongly with a weak stimulation. A muscle comparatively weak, on the contrary, can make extremely powerful contractions under sufficient powerful stimuli. Hence it is evident that a great deal depends on this nerve force. How are we to secure this capacity for sending a strong stimulus to the muscles? A cycler must be in good "fit." This is of paramount importance. (See Chapter on Training.)

He must give his whole attention to the matter. A cycler can never do his best work physically, without giving every thought to it. Many times athletes make poor jumps because they are dis-

tracted by something the moment before the effort is to be made, so that as large a stimulus is not sent to the muscle as should have been. In order to accomplish this, he must also pay studious attention to "habit." Few cyclers can do their best except when comparatively fresh; generally speaking every cycler should approach a contest after two or three days of rest. Some cyclers must practice every day to keep in good "fit."

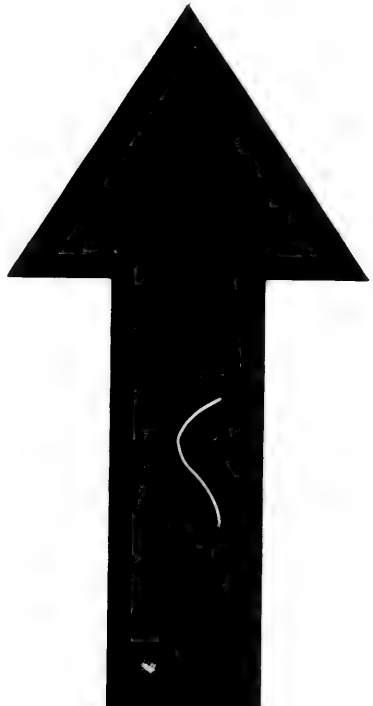
Muscular tissue refers to the muscle itself. To build up large and powerful muscles attention must be paid to exercise and food. In general it may be stated that muscles are best trained by exercise similar to those for which they are being prepared. Thus, if one were training the muscles of the fingers that they might have more agility, it would be worse than useless to do so by giving the hand heavy weights to grasp and lift. This would make them strong to be sure, but it would make them so slow that they would be almost useless for the purpose intended. It would be better to train them to some exercise that demanded agility and control as well as speed. A man could develop large muscles in the front of his legs by heavy lifting, but, although these are the very muscles that are used in jumping, if developed in that way they would not be of the greatest service.

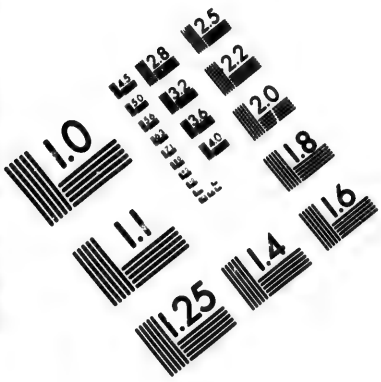
They would have the extremely bad habit of contracting slowly. In training for cycling, it is best to develop the necessary muscle by careful systematic practice on the cycle, unless there is some specially weak part in the cycler which needs particular attention, besides the general practice. Generally, however, it will be found that those who take cycling systematically will become fairly well developed all around. In the past there has been a great deal of dispute on the question of food. The following summary (for full explanation see chapter on Food,) however, appears to be both clear and reasonable, and to bear the test of experience.

Meat builds up the muscle but does not usually furnish energy, sugars and fats furnish energy but do not build up muscle. Simple foods, including some vegetables, no tobacco or wines, and regular habits, about sum up what is to be said on this side of the subject. From all athletes withhold all forms of alcoholic stimulants, however, this does not necessarily include the aged and infirm ; yet to pass legislation treating a thing a crime which is not a crime will lower respect for law, and will not carry the conscience of the voter with it. The best medical authorities state that alcoholic liquors have their use. The Swedish plan, where the man who sells has no interest in the sale would be a step in advance. To make men right by legislation prevents the action of charity, and is not advisable. If a man is too fat and the exercise does not reduce his weight as it should, he can go down rapidly by cutting down his supply of liquids, at the same time doing regular work that will make him sweat. Endurance depends in a large degree on the thoroughness and rapidity of the circulation. (See chapter on How to get wind for Cycling.)

Cycling or muscular exercise increases the number of respirations, and consequently the quantity of air going into and thence out of the lungs, causing an increased absorption of oxygen and giving out of carbonic acid. On an average an adult in easy circumstances takes in 480 cubic inches of air per minute in inspiration ; if he wheel twelve miles an hour, he inhales about five times the quantity, or 2,400 cubic inches ; if he wheel eighteen miles an hour, he inhales about seven times as much, or 3,260 cubic inches. The extra absorption of oxygen and formation of carbonic acid is effected in the muscles. Ammonia and deleterious matters are also eliminated from the lungs during expiration. Air containing .08 per cent. of carbonic acid, with its accompaniment of ammonia and deleterious matter is not fit for breathing purposes, and air con-







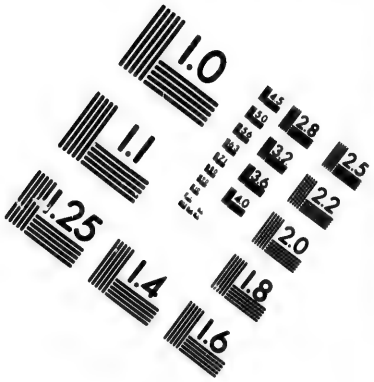
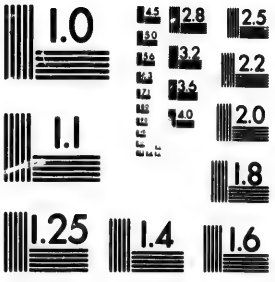
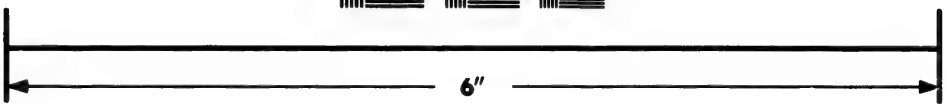
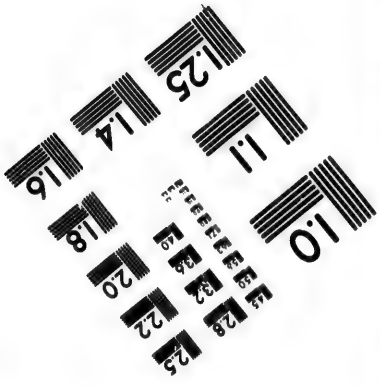


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taining .1 per cent. is positively dangerous. From the above we can comprehend how injurious it is to breathe air contaminated with these effete gases, and the necessity of breathing air that is pure in order to get the best possible results from the human organization.

Muscles undergoing relaxation and contraction create an increased action on the part of the heart to maintain their blood supply. During cycling at say 18 miles an hour the increase of the heart's beats are generally from 5 to 35 beats per minute. When the rider dismounts, the heart's action gradually becomes slower. Prolonged, severe exercise may cause the walls of the left chamber of the heart to grow thicker than natural and constitute the disease called hypertrophy.

When cycling the small arteries of the skin dilate, the perspiration oozes out, more acids, salts and water pass away from the body. The normal amount may be doubled or trebled. The natural amount is about 1¼ ounces per hour. The exercise generates heat and consequently rise of temperature, however the evaporations tend to keep this nearly normal. If the skin is allowed to remain wet after the heart's beats descend to natural there is danger of a chill.

The muscles themselves enlarge and become more dense in substance. Of course with over exercise the muscles will waste.

With muscular exercise the desire for food increases mostly for meat and fats; caused by the wear and tear of the muscles and the carbon given off.

Food is better assimilated, and what is usually termed sluggish liver is unknown.

During cycling exercise the water and urea of the urine is less, more passing by perspiration. However, in the period of rest that follows more than a normal proportion of urea is eliminated. On an average an adult passes about 50 ounces of urine

and 500 grains of urea in 24 hours.

DEVELOPMENT OF BACK, CHEST, LUNGS.

Vital force and health are largely dependent on the activity and development of the lungs. Proper inflation of the lungs develop them—not by panting like a dog and only partially filling them, but by filling them as full as possible at every breath.

Stand in an erect position, either in the open air or in a well ventilated room, with the head erect and the shoulders thrown back. Slowly inflate the lungs to their fullest capacity, retaining the air in them as long as possible, at the same time gently slapping the chest with the hands. This will enlarge the air cells of the lungs and increase the circulation of the blood to the chest, and assist in its growth and enlargement. This course persevered in for two weeks will produce a marked improvement in the breathing capacity, and also in the voice.

ABDOMINAL.

Suspend the body by the hands and raising the legs above the head, and repeat. Or lay on the floor on your back, raise your legs straight till the feet come over the chest, arms to the full extent, trying to make the fingers touch the toes, legs straight, or any similar motion.

CALF.

Stand with hands on side of hips, feet 12 inches apart, raise on toes, now bend knees as far as possible, thence, rise to first position, repeat this, never once allowing your heals to touch the floor. Continue this for ten minutes, as soon as you are able to do so without effort.

LOINS AND HIPS.

Stand with the feet about twenty-five inches

apart. Take two dumb-bells, from twelve to thirty pounds, according to strength, and bend from right to left, (the same motion which is performed in lifting a pail of water,) bend over as far as possible and let the bells nearly touch the ground on either side, keep the body well back, and continue the movement until you experience fatigue in the sides, when you may rest and commence again. Do not continue so long as to produce soreness of the muscles.

THIGHS.

Any position which requires you to bend the knees. The best motions are, with the legs as far apart as possible, turn the body from right to left; when to the right, bend the right knee, and vice versa. The arms should be out to the full extent, and the back of the hands turned upward. Also jumping, running, lifting or skipping in moderation.

MUSCLES USED IN CYCLING.

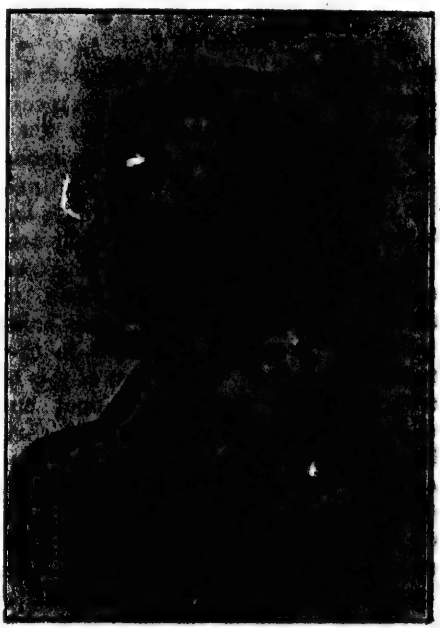
The principal muscles developed on a crank cycle are the extensors of the legs; on a star machine the extensors of the leg and thigh. On a smooth road the arms are exercised very little; on rough roads but little more, if any; fore-arm and grip more and upper arm least. Some claim that cycling developes the upper extremities and trunk. But how can it be so when the arms remain nearly straight when grasping the handle-bar. The arms should flex and extend to their full capacity, and repeatedly and with an effort according to the arm, to thoroughly contract and exercise the muscle. The back muscles below the shoulders are exercised to maintain the body erect. The principal muscles not developed are numerous, the chest, upper-back, the neck, abdomen, upper arm, pronators and supinators of the forearm; the flexors of the thighs and their abductors and adductors, and the deltoid of the shoulders, etc. The stoop-

ing position and the elbows out from the side, has an inclination to round shoulders. The advantages are open air, sunshine, pleasant riding, with good cycle, slight expense to maintain. It is a summer exercise and has started many on the road to health. The disadvantages are that but few of the 600 muscles are developed by it, inclemency of the weather and having to ride a long time to get much exercise, (this is really an advantage.) The danger of falling. With but few exceptions, if any, every rider has had a fall. In long distance races, as twelve hours a day for six days for instance, the ankles usually fail first. With some the back or digestion are frequently deranged.

GENERAL.

Professional athletes or prizefighters who die at an early age from over training, injuries received or especially dissipation, are comparatively few to the masses of people. Their prominence before the people gives their physical failure a widespread notice which unjustly reflects upon exercises in general. We are made to work both mentally and physically. If we do but one it is at the expense of the other. Those who take only physical training are considered ignorant. On the other hand, too close application to mental work will, in the end, produce mental wrecks. As a proof of this look at the overworked clergymen, professional business men and students. See how many of them are compelled to leave business in the midst of success, go away or languish at home for months and even years on beds of sickness and pain. The old adage "all work and no play makes Jack a dull boy," applies very aptly here. Thus we find ourselves from neglect to take exercise. It is but the end of nature in our tired, exhausted bodies, yet we heed it not. Do not hunger until you discover yourself on the downward side of the balance with no chance of recovery; but enter the best conducted and

equipped institution of physical culture. Place yourself under the instruction and guidance of a careful and experienced instructor, who will give you a regular systematic course of exercises during the cold season. In the warmer season devote your leisure time to cycling in the open air. Observe this daily practice of physical recreation for a half to one and a half hours three times a week,—every day if possible, and see what a transformation will be effected. It will give you harder, stronger, better developed muscles, and at the end of the first six months a fairly symmetrical, well proportioned body.



T. ARTHUR BEAMENT,

EX-VICE-PRESIDENT C. W. A.

DRESS.

Costly thy habit as thy purse can buy,
But not expressed in fancy; rich, not gaudy.

Beauty is said to carry a letter of recommendation in itself; and indeed the influence the eye has on the mind cannot be denied.

Now it is not in our power to bestow this good gift on ourselves; though we can, by the cultivation of good temper and intelligence, win a charm of countenance even superior to it. But we can soften many defects, improve an ordinary appearance, and add a grace to beauty itself by the aid of dress; and as to please is one of the minor morals of life which it is our duty not to neglect, we should endeavor to understand what good dress is, and to practice what we have learnt with regard to it.

Do not imagine that to be expensively or extravagantly dressed is to be well dressed.

Simplicity is always elegant, and good taste can lend a grace to dress which no outlay of money on its materials can purchase.

The creed of some persons in respect to dress may be expressed as consisting in a conviction of the necessity of "following the fashion." But this is not the gentleman's view of the question. He, indeed, "follows the fashion" to an extent, because it is an affectation and a vulgarism to outrage it; but he follows it "with a difference." That is to say, he does not hasten to seize on every caprice, and to identity himself with every extravagance. He concedes only to the limits of good taste, and always with an eye to his age, position, and individual peculiarities.

To look like an animated figure out of a tailor's show card is the ambition of a shop-boy, not of a gentleman.

It is often remarked that a man must have been well-dressed when, after spending an hour in his society, you cannot recall how he was dressed. In such a case the eye will neither have been caught by what is showy nor offended by what is mean. No shock will have been given to the sense of propriety, which is, after all, the great point to attain.

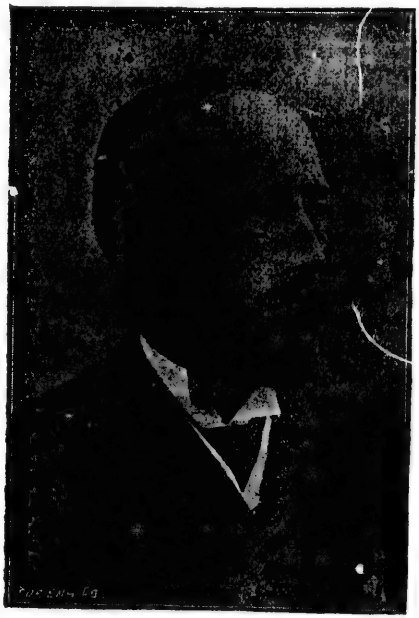
Do not require your dress so much to fit as to adorn you. Nature is not to be copied, but to be exalted by art. Apelles blamed Protogenes for being too natural.

Never in your dress altogether desert that taste which is general. The world considers eccentricity in great things genius, in small things, folly. Always remember that you dress to fascinate others, not yourself.

In dress, as in most other affairs in life, the mistakes more particularly to be avoided are extremes. In accordance with the prevailing customs of society at the present day, the question of dress demands studious attention on the part of every citizen of Canada, for it may be considered an obligation we owe to our fellow citizens as well as to ourselves to make the best of our personal appearance. It is possible to manifest as much pretention in being habitually regardless of neatness as in the extreme adornment of person. It is no mark of wisdom for a person to appear clad in shoddy, who has the means to purchase better, neither is it a mark of genius to wear a shapeless coat, but more probable the owner is too penurious to employ a first-class tailor.

Doubtless, extravagance in adornment of person in the form of dress is a sin and a shame, but so is intemperance in comestibles; and as you do not leave off the habit of moderately indulging in the pleasures of the table because many individuals

take too much food, there is no valid reason why you should appear slovenly because the ultra fashionable dress outlandishly. To make personal adornment the chief holder of your thoughts would be as foolish as to make the existence of your tailor indispensable to your being. It is said a man's dress is a guide to his character.



A. T. LANE, MONTREAL.

As to style, the garment worn should be cut in conformity with the prevailing mode of the place in which the cycler resides.

MATERIAL SHOULD BE WOOL AND WOOL ONLY.

The dress of every cyclist or cyclienne must be made of wool or flannel, not a single thread of cot-

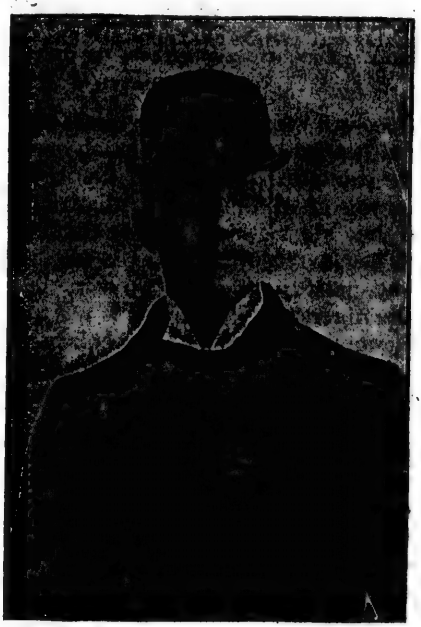
ton or linen fibre to be intermixed—wool and wool only.

The garments being made of such a thickness as will protect the wearer from injurious effects of the surrounding atmosphere; while at the same time its density being such that free access for ventilation may go on. The substance should be light, strong, and durable. All articles of clothing should fit comfortably loose on the body,—corsets, garters, etc., should be dispensed with. We have frequently been called upon to treat severe cases of congestion of the throat and loins, which were caused by a cotton material having absorbed perspiration to the extent of saturation and thence allowed to remain closely applied to the parts, whilst the temperature ofthe body had fallen below normal. Every rider should see that maker's names, and all pieces of cotton or linen, as collar bands on shirt, or pieces sewed about the seams or axilla be torn off, and replacedwith woolen material, even the leather hat linings should be replaced with woolen material.

There are exceptional individuals of peculiar idiosyncrasies, who cannot, or profess they cannot, bear woolen material next the skin. To these we always prescribe a fine cotton under-garment with woolen ones over them, this in a measure tends to counteract the injurious effects of the cotton, moreover, there are few persons who cannot wear Canadian lamb's wool, finely woven, next the skin, if persevered in for a few days.

A rider clad in all wool, may ride through a Canadian thunder shower, (though there is very great danger of being struck by the elongated electrical spark—better seek refuge in some edifice having close doors and windows—thereby avoiding air currents,) if in any kind of good condition with impunity and allow his clothing to dry upon his person, providing he keeps up a vigorous circulation within.

If unavoidably caught in a rain storm, and getting soaked, on entering an hotel it is far better to imbibe some warm stimulant and go to bed in your wet clothes and cover up warm, than to exchange them for damp ones in a cold room. You will become dry in a short time and arise as fresh as in the morning without a sign of stiffness, pain or ache.



G. H. ORR,

OFFICIAL TIMER C. W. A.

A brilliant cycling light.

FOOD.

"The art of feeding, you understand,
Is but a fraction of the work in hand;
Its nobler half is that ethereal meat
The papers call 'The intellectual Treat,'—
Songs, speeches, toasts, around the festive board,
Drowned in the juice the city's taps afford;
For only water flanks our knives and forks,
So sink or float, we swim without the corks."

—OLIVER W. HOLMES.

Man does not eat food simply to satisfy the palate, but rather to supply the actual bodily need. Was it the palate that caused the first temptation? "The tree was good for food." Adam gave ear to Eve, and they ate the fruit. Since then the ills of dyspepsia began. Man's destiny is not to live to eat, yet he must eat to live. In this, the last decade of the nineteenth century, it is the irresistible-fascinating-method by which the cook prepares the succulent vegetables, the luscious fruits, and sapid flesh for the repast, that lures man into epicureanism.

A majority of people over 40 years of age take more food than is required to maintaim the equilibrium of health.

The sensation which we term hunger prompts the individual to take food to replenish the stomach; the palate enables him to make a judicious selection; if the food is simple, as milk, nature's food for the new-born, in itself or with vegetable matter, which is ever suitable, there is little fear of indulgence to an extent beyond nature's demand.

PECULIARITIES OF DIET.

Prior to the days of Chemistry and Liebig, food

was chiefly a question of the palate. Organic chemistry teaches us the use of food and, the elements necessary to nourish the organs of man.

The ancient Romans deemed it necessary to partake of five meals a day; and at their great feasts when the sense of hunger had been appeased, the stomach was emptied in order that the pleasure of filling it might be enjoyed again.

Charles V. could make his way through roast beef, roast mutton, baked hare, and finish with a capon, and drink at once a quart of Rhine wine. Of course, in old age gout took him as a victim of intemperance. In those days the opinions of men regarding food diverged as far apart as the east is from the west. The English athlete lived on rare beef and raw eggs; and the Hindoo wrestlers on sweet meats. The English servants and horses were fed meat and corn respectively, when they were put to hard labor. The hama of Stamboul carried enormous weights on less nourishment than would sustain life in a British subject.

Before being slaughtered, animals were hunted in order to make the flesh tender and more palatable than those not thusly treated, and one writer even went so far as to direct "How to roast and eat a goose alive." It is a well known fact that the Burmese place their fish in the earth until it is putrid to suit their palates; whilst on the other hand the natives of the Sandwich Islands eat their fish alive. Hence the truism "What is one man's food is another man's poison." The Gauchas of the South American pampas subsists on water and lean beef and are noted for their strength and endurance. The comestibles selected by man in different parts of the world varies in the widest manner, e. g., in some parts of China the natives prefer to use eggs "high;" the Israelites lived on "corn and wine" and "oil and honey;" the Arabs, dates; the Egyptians, lentiles; the Hindoo, Chinese and Japanese, rice; the Brahmin, bananas; the

Kaffir, milk; the Spaniard, onions, bread and oil; the Italian, maize aud macaroni; the Sikhs of the Punjaub, pulse-plant seeds; the negro, rice and butter; the Eskimo, fat and oil—as much as 20lbs. daily; the chamois hunter wanders over the mountains with a piece of beef suet only tied upon his body,—his wise selection of the largest amount of fuel in the smallest compass.

The North American Indian who used to pitch his tent and build his camp fire, and hunt and fish on the banks of the river Avon, where the Classic City of Stratford now stands, went forth from his wigwam as Lucifer was rising on the tree tops and ushering in the day, with no provision to supply his bodily wants during the day of wandering, save a small piece of venison suet, being the most compact and sustaining form of nourishment at that time to him available. Has not instinct, the gift of the Great Spirit, guided him right?

The writer has learned by experiments and Indian precept that beef suet wrapped in oiled silk. Also (elixir-quintessence.)

RECIPE.

Tea infusion, seven drams,
Glycerine, one dram,
Oil of Lemon, one drop,

carried in a flask are the most practical, economical, efficient and delicious comestibles available in the Canadian Pharmacophœia of Dietery at the present day, for nutritive sustenance on a day's fast cycling, or for a 100 mile continuous run.

The assertion "fat and bilous," is incorrect, and where there is a tendency to tubercle, the individual should learn to eat fat, just as a cycler learns to pedal.

Canadians have probably a wider range of edibles from which to select their diet than any other country on this planet. (As to any other planet—decision reserved.)

Doubtless this, in a measure, is a great aid in the

almost phenomenal national prosperity of Canada. It is one of the many factors that make Canada for health, happiness and prosperity pre-eminently the most desirable place of all countries in which to dwell.

MIXED DIET.

Many people seem to look upon meat almost as though it formed the only food that really nourished and supplied what is wanted for work. Physicians are constantly coming across an expression of this view. Undoubtedly, a greater feeling of satiety is produced by meat than by other food. It forms a greater stay to the stomach, but this arises from the stomach constituting the seat of its digestion; and a longer time being occupied before it passes on and leaves the organ in an empty condition.

From the preceding statement we can easily comprehend why man requires a diet consisting of animal and vegetable matter.

Should man confine himself to a diet of meat alone the stomach would be called upon to do almost all the work of digestion and the appetite would soon fail; on the other hand should he use vegetable diet only the salivary glands and those of the intestinal canal would perform mainly the functions of digestion; and soon alter a meal the stomach would be craving for food, although the intestines might contain more than is essential to nourish the body.

Farinaceous food or bread is the staff of life: moreover, milk, fat, especially in the form of butter and a little fluid is all that is necessary to constitute a complete food for mankind. In these we have starch for body fuel; in these albumen in the gluten, for tissue repair; in these we have earthy salts, for the blood; in these we have fat, for body fuel and body-tissue.

DIGESTION.

Following the transformation of a portion of

bread and fat during the process of digestion. The saliva comes in contact with some of the starch granules, while it is being masticated and a metamorphosis of insoluble starch into soluble sugar is begun. When it is swallowed, a new action commences. The soluble grape sugar of the converted starch passes through the walls of the stomach, thence entering the gastric vesicles of the portal vein; leaving the undissolved substance in the stomach. Then the acid gastric juice of the stomach acts upon the gluten, the albuminous stroma, or framework of the substance, and by dissolving it sets free the remainder of the starch granules, which had escaped the contact of the saliva. When the pulpy mass passes through the pyloric ring, the exit from the stomach, it is then mixed with the bile, and the secretion of the pancreas, and here the most active part of the digestive process begins. The starch granules set free by the gastric juice come into contact with the diastase of the pancreatic secretion, and are by its action transformed into soluble grape sugar; the pancreatic ferment-trypsin carries on further the digestion of the albuminous substances; and the fat is emulsionised. This is digestion. The sugar, the dissolved albuminoids, the earthy salts, are conveyed by the portal vein to the liver; while the fat globules are conveyed by the lacteals into the lymphatics. Herein is the digestion of a typical portion of food; here are carbohydrates (starch and sugar,) albuminoids, fat and earthy salts—these are all the necessary constituents of the food of man.

The lympatics begin as very small vessels in almost every tissue of the body, and after passing through one or more of the lymph-glands empty themselves either in the thoracic or right-lymphatic duct. That portion of the lymphatic system which originates in the mucous lining of the intestines, takes up the chyle from the intestine during digestion, while it conveys lymph when digestion is not

going on. All the lymphatics of the intestines empty into the thoracic duct. The thoracic duct commences low down in the body by a dilated portion called the receptaculum chyli, it extends upwards close to the spinal column and terminates in the subclavian in the neck near its junction with the juglar; and those lymphatics of right side of head, neck, right thorax, right upper extremity, right side of heart enter the right lymphatic duct.

Thus we have traced the bread and fat from the mouth into the blood vessels. What then about body waste?

In the form of urine 52 ounces passes every 24 hours containing 4 per cent. of solids—(of course in hot climates less passes by the kidneys and more by the skin.) In perspiration about 30 ounces (containing 2 per cent of solids) passes in 24 hours, of a clear, colorless fluid, with a peculiar odor, acid from the sebaceous glands and alkaline from the sweat glands, in the normal state it is acid, (of course in exceptional circumstances the same quantity may be lost in one hour.) In watery vapor from the lungs it loses 7 per cent. per volume besides ammonia and some other deleterious substances. The amount of carbonic acid given off in 24 hours is 12,300 grains.

	Oxygen.	Nitrogen.	Carbonic acid.
Inspired air contains :	20.81	79.15	.04
expired " "	16.03	79.55	4.38

The expired air is completely saturated with aqueous vapor.

The amount of blood in the human body is estimated at 1/13 of the body weight.

THE DESTINY OF FOOD.

The food is acted upon by the secretions of the alimentary passages before it can enter the vessels or lacteals imbedded in the walls of the stomach and intestines.

The albuminous foods are reduced to pulp in the mouth thence swallowed and transformed into the peptones by the action of the gastric, pancreatic, and intestinal secretions. Most of the peptones thus formed enter the small blood-vessels of the stomach and villi. They pass through the



R. A. ROBERTSON,

CHAIRMAN RACING BOARD.

OFFICIAL TIMER C. W. A.

small blood-vessels by osmosis and are conveyed to the liver by the portal vein. In the liver they form oxidized bodies or are re-converted into albumen to aid in the nutrition of the body.

The starches are changed into dextrin and sugar by the action of the saliva, pancreatic, and intestinal fluids, and in this form enter the portal vein by osmosis, and thence conveyed to the liver, and there it is stored till required to be oxidized for the production of heat and muscular energy.

The fats are reduced to pulp in the mouth, and their fibrous stroma or frame dissolved in the stomach, so that the fat is liberated. When the fats pass into the intestine they come into contact with its secretions and are reduced into fine particles, small enough to easily enter the lacteals—this is emulsion.

They are also saponified. Some of the fatty matter enter the portal vein, but the larger portion enters the lacteals, commencing in the villus. The walls of these vessels when wetted with bile easily allow fatty matter to pass through them.

Lastly, the fatty matter forming the chyle pass through the mesenteric glands and into the receptaculum chyli and thoracic duct.

The food that enters the body in the form of meat, starch, sugar, fat, after being digested passes into the blood vessels as peptones, fatty matters, and sugar. The effects of the albumen, sugars, and fats absorbed from the alimentary passages, pass from the body by the kidneys and lungs in the form of urea, salts and carbonic acid.

TRANSFORMATION OF COMESTIBLES.

The great processes of the acts of digestion are brought about by a singular group of substances termed ferments. These substances are an exceedingly important factor in the transformation of the food.

The comestibles are reduced to pulp, and mixed with saliva in the mouth; some of the starch is converted into maltose and becomes alkaline, and the fats and proteids pass unchanged. In the stomach the mass is rendered acid, the fibrous stro-

ma of the fats are dissolved, and the fats set free, and the starch and sugar remain unchanged. The albuminous and proteid foods are mostly dissolved and a thick mixture of peptones, liquid fats, and starches are formed, these are called chyme, and are slowly passed through the pyloric ring into the intestines.

In the intestines the chyme is mixed with the bile pancreatic and intestinal fluids, and becomes alkaline and again conversion of starch into sugar commences, fats begin to be emulsified, and the remaining proteids are transformed into peptones. The peptones and salts which are diffusible pass into the portal vein, in a fine state of division the fat enters the lacteals. In the large intestines the liquid chyme gradually becomes solid, and by fermentative changes becomes acid, and the odor of feces is here acquired.

CHOICE.

Beef should be of good quality: the fat should be firm, not yellow, and free from blood, and should not be in too great proportion relatively; the muscle should be firm without being tough, not too pale, nor dark colored, and should not present any marbling or lividity on cross-section. The most esteemed parts of the beef are the thigh and hip (round, sirloin, fillet,) the loin and certain parts of the shoulder (rib-roast, porter-house steak, etc.)

Mutton, although possessing a lower degree of nutritive value than beef, is one of the most useful of the animal foods, as it is easily digested.

Venison is more easily and quickly digested than beef, but does not possess the same nutritive value.

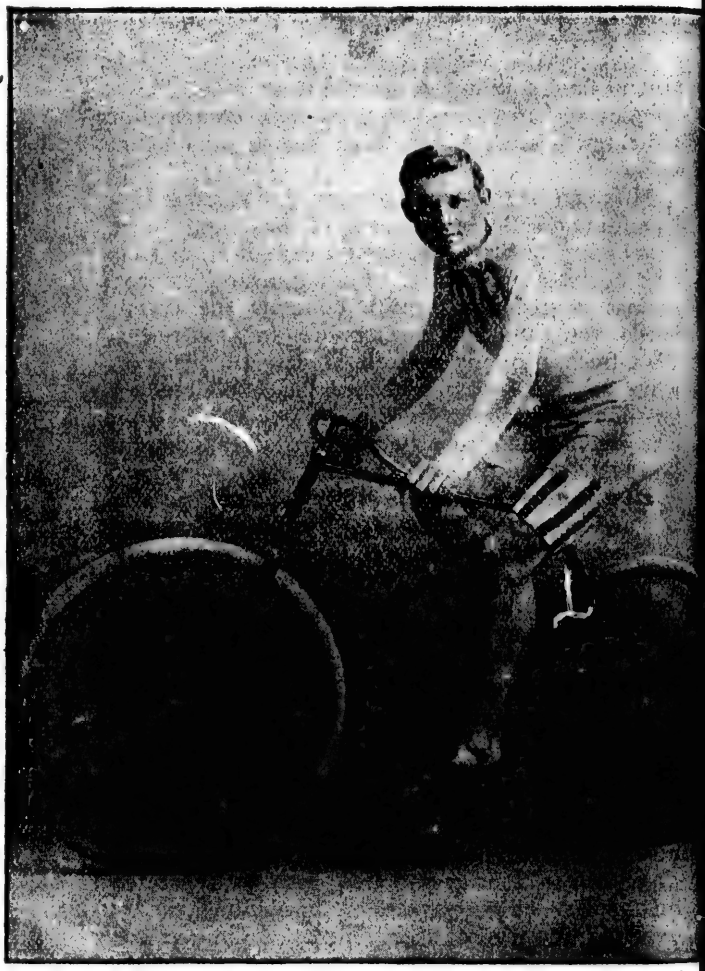
Chicken has an agreeable taste, the tissues soft and easy of mastication and digestion. Next to the chicken in point of digestibility is the domestic turkey, then goose and duck. Certain "game birds," e. g., the prairie-chicken, wild-ducks, wood-

cock and snipe all possess a high degree of nutritive value.

Eggs usually weigh about two ounces. Eggs raw, or better, whipped, are the most digestible of alimentary substances, and, as their composition indicates, possess a very high degree of nutritive value.

Milk can be temporaly preserved in summer time by adding a little bicarbonate of soda and sugar. It is highly nutritive and should contain from 10 to 15% of cream by volume. Boiling insures its proof against germs. Buttermilk contains the casein, lactin and salts, and is therefore very nutritious. Fish, fresh, properly cooked, is easy of digestion, white fish, shad, bass, and fresh mackerel, are better than cod, salmon or eels. They should soon after being taken from the water be either broiled or boiled. At the time of spawning, and immediately after the flesh of fish is watery and simi-gelatinous and not good for food. Oysters rank among the most digestible of food, easiest digested raw, or broiled in sickness, stewed is the form in general use. For irritable stomach, the most easily borne oyster-soup is prepared by the addition of the liquor to boiling milk.

Wheat-bread made from superfine flour is easy of digestion; owing to its lightness and sponginess permitting a rapid effusion of the gastric juices through every part of it. Most of it is also available for nutrition; there is little residuum; hence the constipation which attends its use in large proportion relatively to the other constituents of the diet. When flour in unbolted (bran not separated, an increase of nutritive value is obtained, at the expense, however, of digestibility. A large part of the bran, probably, resists the action of the gastric juice, and hence, irritating the mucous membrane, increases by reflex action the secretions and vermicular movements. Bread requires from 3½ to 4 hours for complete digestion. Brown bread longer.



W. HYSLOP, TORONTO,

CANADIAN CHAMPION, 1893.

Rice is one of the most digestible of vegetable foods requiring when boiled, about one hour, corn and oatmeal about 3 hours.

Potatoes, next to wheat, is the most important food derived from the vegetable kingdom. When cooked the tuber should be mealy and dry. The sweet potatoe is the most nutritive.

Starch, sago, arrowroot, and tapioca, differ from the preceding vegetable foods, in that they contain no nitrogen. They are digested in from one to two hours.

Turnips, parsnips, carrots, onions, asparagus, beets, cauliflower and cabbage, all require from 3 to 5 hours for digestion.

Ripe fruits, as grapes, apples, pears, peaches, oranges, bananas, lemons, etc., possess but little nutritive value, as they contain only about 10 to 15 per cent. of solid matters. Dried fruits, as dates, figs, and raisins, are relatively much more nutritive, because they contain a larger percentage of sugar.

IDIOSYNCRASIES.

Individuals of square abdomen and large internal organs require a full meal at considerable intervals, while individuals of thin flank generally want a spare meal, and that frequently repeated. A wife having small digestive organs who takes her meals with her husband, who has internal organs of large capacity soon begins to fail; and finds it necessary to take a meal between those of her husband. Her conformation of body is different from her husband and therefore she cannot do as he does. Every one knows from personal experience that digestion is much quicker with some persons than others; and that some articles of food are more comfortably digested than others.

A farmer cannot run a thrashing machine without horse, steam or some other kind of power. Power he must have. Neither can man perform

labor without food to supply the full requisite for the production of that power; nor can he perform labor or take exercise before breakfast without injury to his system. It would be just as rational for an engineer to think he could generate steam with fire alone without water; or a coachman to think he could get power out of his horses by using his whip without giving them food; or a cycler to run his wheel without oil—it would very soon wear out. These so-called "constitutionals" indulged in by so many people before they break the fast of the night are a delusion and a snare.

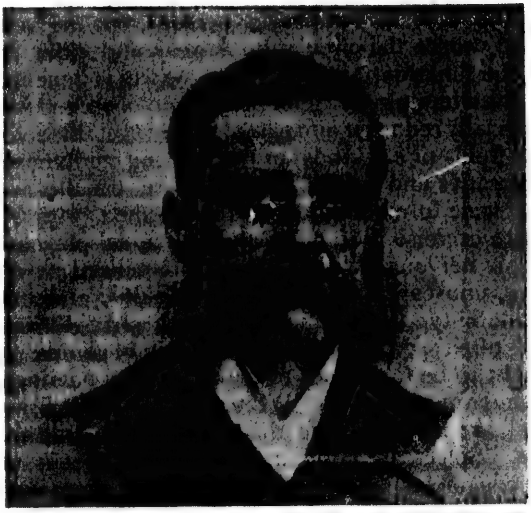
The food requirements of adult human beings vary according to climate and temperature, and according to the activity of their organs; they also vary according to individual peculiarities. Some persons, even in health, digest rapidly and imperfectly the food which they consume. With them a considerable amount of it passes away undigested through the intestinal canal, and escapes with the feces. With persons so constituted, hunger soon returns owing to the demands of the economy having been imperfectly supplied, and a supply of food is required; it is as if half the coal placed on a fire had fallen through the grate. With others, on the contrary, the process of digestion is slow and the elaboration of the nutritive materials contained in the food is complete. Such persons both require less food, and that food less frequently, inasmuch as they extract more nourishment from what they take. And such individual idiosyncrasies is by no means confined to human beings. All who have had much experience with horses, know that some can do a great deal of work on moderate supplies of food, while others "eat their heads off in no time" in stable language, and yet are not capable of much work.

Where the constitution is of a mixed nature, or a compound of two or more temperaments, a diet composed of animal and vegetable aliment in near-

ly equal proportions is under ordinary circumstances the best. But where any one temperament predominates, the diet ought to be modified accordingly. Where, for example, the sanguine constitution prevails, and is characterized by the florid complexion, great activity, strong action of the heart and blood-vessels, and a consequent liability to diseases of excitement and inflammation, the food ought to be habitually of a kind calculated rather to soothe than to stimulate. Red meats, spices, wines, and fermented liquors ought to be used sparingly, and the principal support to be derived from refreshing soups, fish, mucilaginous, vegetables, acidulous fruits, and diluting drinks. In the case of lymphatic persons, on the other hand, where the circulation is weak and slow, and all the functions are feeble, the system is benefitted by the stimulus of a larger proportion of animal food, especially red meat and game; while vegetable soups, and fluids of all kinds prove relaxing and hurtful. Aromatics and spices, however, are useful, as is also wine in moderation and conjoined with adequate exercise. If again the individual presents a highly nervous temperament, characterized by delicacy, unusual sensibility to impressions, and great excitability, without proportionate strength, such as is often seen in females and in men of genius, care ought to be taken not to make use of a heating or stimulating regimen. White meat, such as fish or fowl, are more suitable than the kinds in ordinary use. Spices are also hurtful, but farinaceous and mucilaginous. Aliment and ripe fruits are generally admissible,—always supposing that moderation in quantity is attended to, and that the mode of life is in other respects regular and rational. When the dark, bilious temperament predominates, and much bodily exercise in the open air is enjoyed more latitude in the choice of food is admissible, than in any other constitution.

An individual who has been accustomed until

middle age to eat often, may not with comfort and advantage be able to supply the wants of his system by two meals only; and yet this system of feeding may perfectly agree with his neighbor early inured to it. Thus it is that the German, the Frenchman, the Englishman and the Canadian become habituated to the food and food hours which obtain in their respective countries, and that their digestive powers often give way when they change their residence, and endeavor to conform to the novel habits of their new place of abode.



W. PAYNE, LONDON, ONT.

SUBSISTENCE DIET.

Nitrogenous matter (meat)....2.33 ozs.
Fat .....0.84 "
Carbo-hydrates (starch-sugar). 11.69 "

ACTIVE CYCLER'S DIET.

Nitrogenous matter.....	5.41 ozs.
Fat (force-food)	2.41 "
Carbo-hydrates.....	17.29 "

Carpenter "states that about two pounds of bread and three-quarters of a pound of meat are amply sufficient to compensate the daily losses of the system in a healthy man," in tropical climates less; in arctic climates more.

Nitrogenised matter is necessary to produce and maintain muscles in good condition for cycling. Generally speaking meat produces—muscle; sugar—energy.

COOKERY.

"We may live without poetry, music, and art;
We may live without conscience and live without heart;
We may live without friends; we may live without books;
But Civilized man cannot live without cooks.
He may live without books—what is knowledge but grieving.
He may live without hope—what is hope but deceiving.
He may live without love—what is passion but pining;
But where is the man that can live without dining?"

(MEREDITH.)

Cooking is both an art and a science, and good cooking implies both knowledge and skill. A cook need not be a chemist, physiologist or philosopher; but he must have skill, acquired by practice and experience. His skill must be applied according to the teachings of science, to obtain the best results.

Neither bad air nor bad food are compatible with either sound mind or body. In cooking "knowledge is power" indeed.

In cooking meat heat coagulates the fibrine and albumen, and softens the gelatinous constituents, the connective tissue, by which the fibres are held together, and thus allows of their ready separation. Other things being equal, warm food is more easily digested than cold.

BOILING.

Meat boiled retains more nutritious properties, and is easier of digestion, than when cooked in any other way, but it is less palatable. To boil properly place in boiling water, to induce speedy coagulation of the albumen of the outer portion and thus form an impervious envelope that will prevent the escape of the juices from the interior. After boiling five minutes reduce the temperature to 160 degrees Fahr., and continue until cooked.

ROASTING.

Roasting, next to boiling, is the best form of cooking. The same principles apply as in boiling, i. e., the heat should be stronger at first, till a layer of consolidated tissue has been formed on the outside, and then the temperature reduced, so as gradually to coagulate the albumen of the interior without shrivelling and hardening the fibre. By this process some Osmazome is lost. Meat cannot be cooked as evenly to the centre by this process as in boiling. Broiling has much the same effect as roasting, and is the best mode of cooking fresh water fish, and all small fish. Liebeg was the first to demonstrate that beef tea is devoid of albumen, therefore a vital restorative rather than a nutriment, unless albumen, such as beans or peas be taken with it.

EGGS.

To boil eggs properly, place in water at 180 to 190 degrees Fahr. for five minutes, and when taken from the water crack the shell at top to allow the heat to escape, it will then be like a jelly from shell to centre. [Mr. Harris, baker.]

FISH.

Fish is much firmer and loses less of its flavor by being boiled in hard water.

POTATOES.

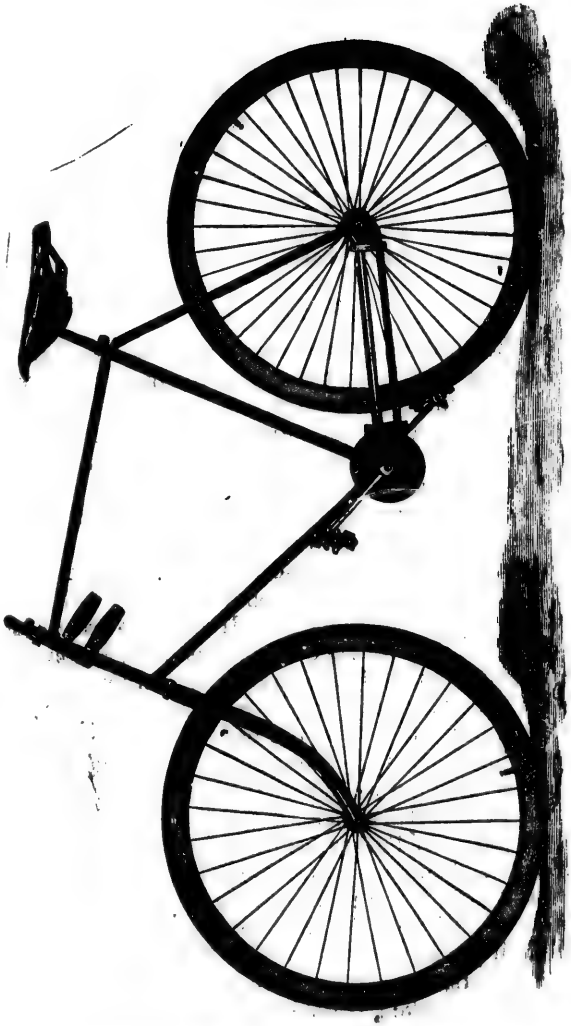
Potatoes are best cooked by steaming, and in their skins rather than peeled, as the object is to retain, as far as possible, those constituents, which, being soluable, would be lost in the water in which they are boiled. In either case the heat should be continued till the starch cells have all been disrupted, so as to allow their contents to escape, and thus render the potatoe mealy.

BEVERAGES.

"The cup that cheers but not inebriates," conduces not a little to the contentment of the poor and the comfort of the rich.

The amount of fluid required daily is stated to be about five pints, to meet the water loss by the kidneys, the skin and the lungs.

The fluids most serviceable to the cyclist are tea, coffee, cocoa, water and milk. Coffee has a somewhat laxative action on most persons; on the other hand, tea has astringent properties—especially that variety known as green tea. If used to excess as beverages, they derange the organs of digestion and excite functional disturbances of the nervous system —on the part of the digestive organs: acidity, flatulence, eructations; on the part of the nervous system: headache and confusion of mind. Cocoa is more directly nutricious than coffee or tea, and, as it is rich in fatty matters, is much more difficult of digestion. In Turkey, where much coffee is used, gout and rheumatism are almost unknown. It acts as a diuretic, and is restorative in ordinary conditions of fatigue. In the Antartic expedition the men all preferred it to spirits. As an article of diet for soldiers, tea is most useful. The hot infusion, like that of coffee, is potent against both heat and cold, it is most useful in great fatigue, especially in hot climates, and also has a great purifying effect on water. Personally, we prefer coffee or cocoa.



WANDERER CHAINLESS SAFETY.

Cyclists may choose the one most suitable to their taste. The best effects will be obtained by drinking them warm, and in every case only after the meal is completed,—not whilst masticating. To quench thirst cold tea may be preferable. Racing men, travelling from place to place, should never drink liquids, (including milk) that has not been boiled.

LIQUID.

Milk is a complete and perfect food, containing fat (in an emulsionized form,) albumen, (in the form of casine,) carbonates, (as milk-sugar,) with salts, (phosphates and others,) all properly diluted. On this, life can be sustained for an indefinite period.

Boiling water poured upon milk and drunk whilst warm, is an excellent mixture, and may be taken at any time by those with whom it agrees. We know of none better. The warm water destroys germs and prevents the milk curdling during digestion. Towards the close of a long race, or when a race meet is unduly prolonged, an excellent mixture is prepared as follows:—The white of two eggs is strained through a cloth, an equal quantity of water is added, and to this if desired a quantity of brandy, whiskey, rye or malt, suitable to the idiosyncrasies of the individual.

Fresh butter-milk is an excellent nutritive fluid, having medicinal properties. It is recommended for dyspepsia, heart, kidney and lung diseases. Water taken as hot as possible is an excellent alleviator of thirst—cold water creates thirst. We have always found that from a pint to a quart of hot water drank immediately after "riding all out" in a long distance run, that the distressed feeling would disappear and strength return as if by magic. Water undergoes no change in the body. Citric acid tablets are useful to quench thirst. The athlete who is in good "fit" and at all times breathes properly, will not be troubled with the sensation of "thirst."

An egg beaten up in milk is always a safe resource,—masticated, not quaffed. If in the evening and not going out again an ounce of sherry or half an ounce of brandy may be added.

Any reliable preparation of Fluid beef, taken as beef tea, preferably warm. It may also be had in the form of lozenges, one being allowed to dissolve in the mouth as needed.

Our favorite prescription in all circumstances, cycling or otherwise, is—

Infusion of tea (black variety—weak)	7 drams,
Glycerine	1 "
Oil of lemon	1 drop.

Dose, ad libitum.

As to alcoholic stimulants and tobacco, we have never used them, (except when as a child on mother's knee, doubtless on occasions we received the ancient dram) although prescribing it largely daily in our professional work.

In our opinion, the strong, robust athlete does not require them; but the individual who has passed the age of sixty and feels that the infirmities of old age are creeping on, that variety of liquor most compatible with his own idiosyncrasies, of the best brands only, taken after dinner, or better in the evening, when not going out again, will not only enable him to accomplish more work, and exhiliarate while at his work, but even may, in a slight degree, prolong his lease of life.

COCA.

The generic term "Theobroma," or food of the gods, was given to it by Linnaeus, by whom it was highly esteemed.

The leaves of the coca plant (erythroxylon coca) are often chewed by racing men, particularly in long distance contests, and, undoubtedly, for the time being increase the motor power, besides giv-

ing greater freedom in respiration, and enabling the user to fast for considerably more than the ordinary period without feeling exhaustion. Weston, having learned this fact, was detected in the use of coca during one of his extraordinary feats in London.

Coca leaves resemble tea leaves, but have a slightly visible curved line on each side of the mid-rib. They are chewed by the natives of Bolivia to sustain them during the day, that they may defer eating until the evening.

When the road slugger feels "baked" he may chew a few leaves, or take twenty drops of the essence of coca in an ounce of water, when his fatigue will disappear as if by magic.

The leaves have a strong, tea-like odor, and an infusion resembles ordinary tea in taste. Its action on the system causes a feeling of contentment and of well-being takes possession of the mind, the sense of fatigue is removed, drowsiness is experienced for a brief period, but it is soon succeeded by wakefulness, and increased mental activity.

But valuable as coca is within due limits, it is dangerous when taken in excess, ruining the digestion, and, like opium, making a miserable wreck of body and mind.

Use coca wine, or better take it only under the directions of a cycling physician.

F. W. Shorland, the English long distance champion, uses cuca-cocoa whilst training, and cuca chocolate during the race. Manufactured by Root & Co., London, W. C.

TRAINING FOR CYCLING.

"His joy is not that he has got his crown,
But that the power to win the crown is his."

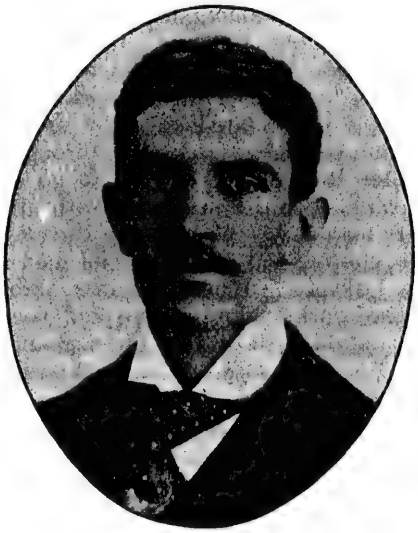
The Greek public games were instituted in honor of gods or of deified heroes, and the victors, especially in the olympian games, received the highest honors. On their return home they rode in a triumphal chariot into the city, a portion of the wall being thrown down to give them admittance; they were honored with the first places at all shows and games, were maintained at the public charge, and great honor descended to their relations.

The games were running, throwing the discus or spear, leaping, boxing and wrestling. Wrestling was the most ancient exercise and was performed by two naked men anointed with oil, and sprinkled with dust, folded themselves in one another's arms, and endeavored to throw each other to the ground.

The olympic games, were celebrated in honor of zeus olympius, and were held at Olympia, a town in Elis, whence they received the name Olympian Their institution is assigned to Hercules by some, but it is impossible to say with any accuracy who was the real founder. They were for some period neglected, until the time of Iphitus, who re-instituted the solemnity; but it was not till B. C. 776, when Coroebus won the foot-race, that the Olympiads were employed as a chronological era. The games were celebrated every fifth year, in the attic month Hecatombæon, and continued five days, from the 11th to the 15th inclusive, the interval of four years between each celebration of the festival being called an Olympiad. The Eleans had the

management of the games, and appointed the judges, who were chosen by lot from their number. Women were not allowed to be present.

Those who intended to contend were obliged to swear that they were freemen, not guilty of any sacriligious act, and had spent the proper period—ten months—in preparatory exercises. The wrestlers were chosen by lot, and the exercises, in addi-



W. B. CLARK, Jr.,

PRESIDENT S. B. C., SARNIA.

tion to those mentioned in the last section were horse and chariot races, in which, as in several of the other exercises; boys contended. There were also contests in which musicians, poets, and artists, strove for the victory.

The victors in these games were rewarded with wreaths of wild olive, and statues in the grove of

Altis; and still more substantially on their return to their own cities, as mentioned before.

The object of training is two-fold. To produce perfect general health, the "men's sana corpore sano," (Horace) and, to develop special powers in individual organs.

The Rev. T. De Witt Talmage, in a sermon, "Wholesome Recreation" says—"physical development which merely shows itself in fabulous lifting, or in perilous rope-walking, or in pugilistic encounter, excites only our contempt; but we confess to great admiration for the man who has a great soul in an athletic body, every nerve, muscle and bone of which is consecrated to right uses. Oh, it seems to me outrageous that men, through neglect, should allow their physical health to go down beyond repair. A ship which ought with all sail set and every man at his post, to be carrying a rich cargo for eternity, employing all its men in stopping up leakages! When you may, through the gymnasium, work off your spleen and your querulousness and one half of your physical and mental ailments, do not turn your back on such a grand medicament."

It is said that the Duke of Wellington, when once looking on at the boys engaged in their sports in the play ground at Eton, made the remark, "It was there that the Battle of Waterloo was won."

Training is the process of taking a man from a state of racing incapability, into a perfect state of health, which is shewn by the great increase of strength, activity, wind, and power to continue great exertion and pace to the extent of his endowment. More briefly,—Teaching and forming by practice.

An oarsman would not expect to win a race by fast use of his oars, without some attention to steering. The cyclist, who does not habitually use his brain, as well as his muscles, will never be an ac-

complished and successful rider. Success depends more on head work, than leg work.

That man who can acquire and use instantaneously, if needed, practical racing knowledge will stand head and shoulders above his fellow cyclists, as does the skilled mechanic above the ordinary laborer.

Physical strength profiteth nothing without the active and clear brain to guide.

The individual who studiously observes the instructions hereinafter given, will gradually improve in form and in the control of his cycle, this will enable him to ride very fast, and to take long journies without experiencing ennui—in other words he will then be able to obtain the maximum of pleasure with the minimum of labor.

This acquirement is in itself invaluable, and though he may never devote the time and attention necessary to become a champion of the path, yet, easy form and speed are obtained, and these are the most desirable accomplishments of any cycler.

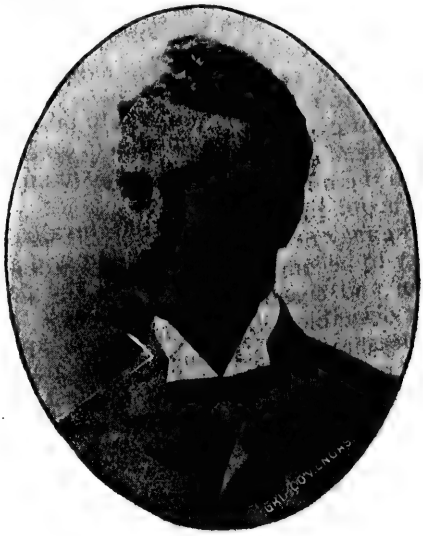
The pleasure seeker sitting on the grand stand does not really enjoy a cycling contest, until he understands the game and observes or follows each rider's movements or tactics in striving for position.

"To tell our own secrets is often folly;
To communicate those of others is treachery."
—RAMBLER.

The Canadian athlete, of all forms, seems to have erroneous ideas as to training for contests requiring skill and endurance. You will observe that he will, a few weeks before his event, be it a lacrosse match, a boat race, a cycle meet, etc., it is just the same, he is going into what he calls "active training," with much enthusiasm and hopefulness, it might rather be termed "passive training," as his enthusiasm soon grows cold, and he quite likely leaves the sport entirely. This is only nature after all, for there was not much real pleasure in it for

him, as generally saying he was injuring his system, instead of renewing and increasing its vigor.

Every athlete knows, that when a muscle is brought into active exertion, that the blood flows abundantly through the arteries to that muscle, that heat is generated in that muscle, that changes are consequently taking place in that muscle, that waste matter is being produced in that muscle, that when



T. H. COOK.

VICE-PRESIDENT S. B. C., SARNIA.

the activity is greater than a certain point that the veins cannot carry away these waste products fast enough, that this waste material clogs the process, that then the action becomes muddled, that the muscle is not properly nourished, that the muscle will consequently atrophy or grow smaller, that the quality of that muscle will deteriorate. The same

applies to all the organs of the body. This is what occurs in the present system of training.

The athlete also knows that when a muscle is brought into moderate activity the blood flows through the arteries in greater than the normal quantity to that muscle, that the veins have time to take up and carry away the waste products and excrete it from the body in the breath, urine, or by the skin in the form of watery vapor, that the muscle is now being well nourished and is slowly growing larger, that the quality of the muscle is increasing.

This is the secret of training. This is the process of obtaining quantity and quality in a muscle, or organ, this is the method of acquiring stamina and agility, this is the nucleus,—or in other words, the best pill in the book.

The Canadian famous oarsmen, Hanlan and O'Connor, were defeated by the Australians who, though inferior men, educated themselves by the slow, continuous process, and, of course, won easily.

A muscle, or organ, then, cannot grow in a week, a month, or a year to its greatest capacity. It requires many years to attain this greatest capacity.

Well, then! the athlete says that is only a prescription for the professional. Is it? No, certainly not, if the pure amateur cannot devote the time necessary.

(He can if he tries—where there is a will to do, there will be found a way) he should follow this method so far as his time will allow, and when he does enter the contest he will feel he is not in perfect "fit" yet he will be much more successful in the contest than if he had tried to do in a month what nature says many months are required so to do.

Besides, this hastening process, which is a characteristic of the Canadian people to-day in almost every calling, as in athletic games; it is the most

prominent cause of failure or collapse.

Nature, verily intended that physico-mental-culture, should be, not as a task of drudgery, but the very opposite—one of irresistible enlightening, fascinating, enjoyment.

Training is not a work! It is a profitable pastime. Doubtless an athlete's training hours, if followed according to the dictates of nature in edifying his "earthy tabernacle" are the most enjoyable of his career, and when he is waiting for the signal to go at the start of an event, he may always bear in mind that the power to win is his if he but use that power to better advantage than his rivals.

This listless, tired sensation so common in the present age amongst those of sedentary habits who do not take regular exercise in open air, vanishes (in tenues auras) into the thin air by moderate doses of cycling.

No book will ever be written, by which riders may train themselves, as everything depends on the constitution of the rider, and what would kill one man would have no effect on another. The only thing possible is to point out the general directions to be observed, and thus let the rider ascertain what is best for himself. It is safe to say that not one man in a hundred, who attempts to train himself, will succeed; and in nearly every case it will be because he took too much work.

We know a rider that won the best race of his life after a three weeks rest.

One of the best trainers in England has said, "The object of training is to get the body, muscles and vital organs to the highest pitch of health and strength, by regular living, exercise and practice of those qualities of endurance, speed and judgment which will take a man first past the winning post, ahead of the best of his opponents."

This man trained two men at the same time, giving each almost the same work—short sprints on cycles,—and then sent them for the particular

records they desired, with the result that one did the mile under 2.10, and the other did twenty-five miles in the hour, breaking up nine pairs of pace-makers on a tandem, and this on a windy afternoon.

How widely different were the ends aimed at by these riders, and, yet, with the same amount of work, they were both successful. During their three months' training they lived on beef, mutton and chicken, and no aromatics, or indeed, any condiment, was placed on the table. Their trainer never knew what amount of work he would give them until he saw them on their cycles, when he could easily detect whether they required rest or hard work.

It is said that the first point in oratory is action, the second, action, and the third, action. So with cycling, the action is most important, and no one need expect to become a great rider without an easy style. This holds good in any athletic game ; the man with the easiest style usually getting over the ground the fastest.

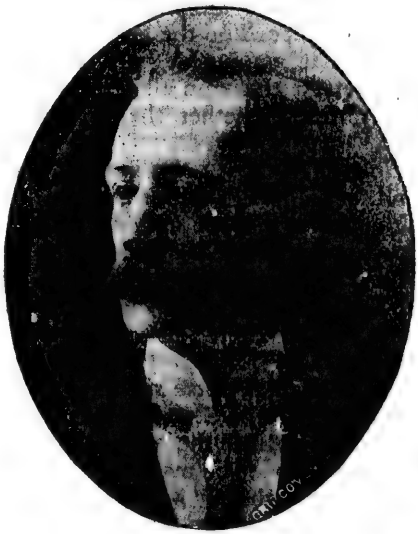
Referring to the loafing question, a writer on horse-racing says : " A worse ridden mare we never saw than she was in the Stratford meet when Jehu rode her in the lead all the way, throwing to the dogs whatever chance she may have had."

Here is a case where " waiting tactics " would, presumably, have won an important race on the outcome of which many hundreds of dollars were wagered.

No one disputes the assertion that the duty of every racing man is to win when he can, and, as the practical racing men all know, that to make pace means to lessen their chances of winning. It may be taken for granted that they will not lead unless they have to. In that case they will feel as one of the most consistent "waiters" in Stratford did when he found himself, (according to agreement amongst the riders) in front.

He remarked, "This is very awkward," as it undoubtly was, to a man who wanted his field before him where he could see them.

When a rider knows that an antagonist has a wonderful sprint and feels sure that he cannot beat him at that game, he might try to run him off his legs for pace. If he takes him all the way through he may find a weak spot, but the sprinters of the



DR. A. N. HAYES,

PRESIDENT S. B. C., SARNIA.

present day will stand a lot of this "running out" before they cry enough.

While there are racing contests the men who mean to win will wait if they know that they improve their chances of winning by doing so, and every practical racing man knows that they do, as sportsmen they are, above all things, bound to win.

Synyer says: "Is mere pace forcing preferable to tactics? Certainly not, and even as Osmond has tried the pace-forcing system, so have I, and I have come to the conclusion that for a man to be able to run another man off his legs he must be, at least, a hundred yards the better man in a mile, especially when there is any wind about."

Howell says: "I have won mostly all my championship races at the waiting game. I used to go all the way, but found out that I could win much more easily by waiting, and sprinting my men down at the finish." A gamer man than Dick Howell never crossed a wheel.

The famous American racing professionals, W.A. Rowe and H. Wheeler in almost all the events in which they were competitors played the waiting game, and (nearly) always won.

The following rules of the track, are posted up, and in force at the famous Herne Hill track, London, Eng.

1. All riders must be suitably attired.

2. Riders overtaking others must pass on the outside only.

3. The path may only be ridden left hand inside.

4. A rider, whether riding in a string or alone, should never slow suddenly or cross the track.

5. A rider, before dismounting, should hold up his hand, and ride off on to the grass on inside of track.

6. No rider is permitted, under any consideration to dismount on the track.

7. In all cases a rider must keep as close as possible to the inside of the path.

AGE.

"When all the world is young, lad,
And all the trees are green,
And every goose a swan, lad,
And every lass a queen;
Then hey! for pedal and wheel, lad,
And round the world away,
Young blood must have its course, lad,
And every dog his day."—Irish Cyclist.

Many young men are as fully developed both physically and mentally at 17 as are others at 21 years of age; and until they are 21 they should restrict themselves to very short distances. With a light, rigid wheel, a very low gear and short distance events, it is perfectly safe for every youth in good health, to compete in cycling events, provided he be "fit" for racing by the "slow, continuous process," and have a mentor to curb him when attempting to do too much cycling.

The principal objection is if a youth be allowed to compete in race events, his very mind fastens unto the word speed, instead of making form or correct motion the object sought for, and this may prevent him in after years in ever attaining to championship honors. It is well for him to be present and observe how model riders economize their strength.

BATH.

After the rider has had a good rubbing from a few minutes to half an hour. A towel soaked in cold water is rubbed quickly over the head, neck, spine and the whole body. This does not produce any injurious shock. The rubbing process is again applied. He is then dressed in woolen clothes, being careful to protect base of neck and feet from cold winds. This form of bath or, pore contractor, can be given at any place or season and is perfectly safe, and can also be used by the rider in his own room after each run.

The shower and plunge baths will answer in some cases, but generally speaking they are not practical nor safe in Canada.

After such treatment following a brisk ride, the skin will be found nearly as soft and lissom as after a Turkish bath, without the tediousness or dangers of the latter process.

Warm water is occasionally necessary, for some people, for the purpose of removing the mucilaginous and oily secretions which exude from the pores of the skin. In cold weather, however, these excretions form a protection to the body and if removed too frequently by the use of warm baths, or artificial sweating; there is great danger of taking cold, and contracting infectious disease through the pores of the skin. This bath, however, is not used in the dressing room but only before the person retires to bed.

A bath judiciously taken increases appetite, improves digestion and the assimilation of food. The bath, then, is a tonic in the strictest sense of the word.

Again, many who are unable to bathe in simple water without suffering great depression, can bathe in sea-water with great benefit.

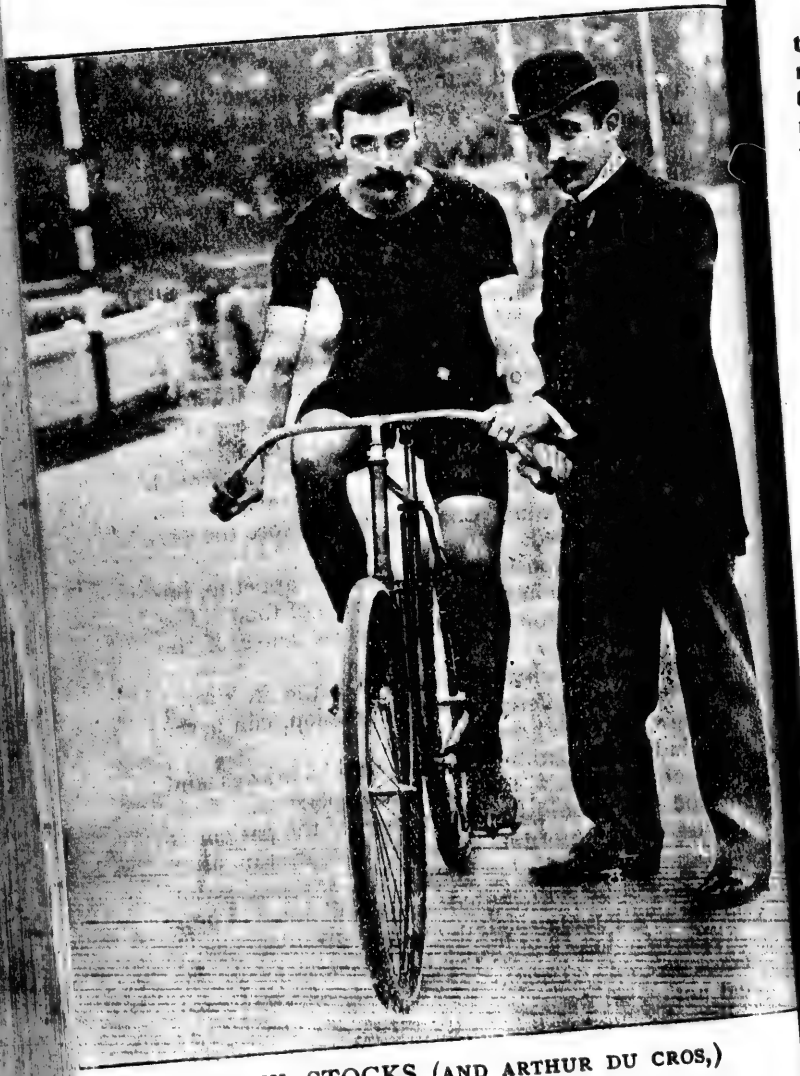
Injudicious bathing often seriously injures and even endangers the lives of weakly persons.

The skin should be kept active: if the patient is robust, by the morning cold bath and friction after it; but if weak or debilitated, the evening warm bath should be substituted. An occasional Turkish bath with active shampooing is advantageous.

The skin does not absorb the water of a bath be it hot or cold. The good effect is produced by direct action on the skin.

"Goose-skin" is caused by the contraction of the skin and the consequent protrusion of the hair roots and tollicles.

Artificial sweating is thus produced: the rider, stripped is rolled in a sheet wet with cold water,



J. W. STOCKS, (AND ARTHUR DU CROS,)

The first rider to accomplish 25 miles (and 690 yds.) in one hour,—Humber cycle, .94, Dunlop tires.

then rolled in a thick wool blanket and placed beneath a feather bed covering all up to mouth. In fifteen minutes reaction comes on. Allow him to remain for an hour, then rub body all over with towel out of cold water, thence rub dry and clothe in flannel.

For those having strong vitality, an easy and practical method, is,—when the rider comes in warm, in a warm room, immediately (do not wait to cool off) step into a bath from 60 to 70 degrees, applying water with friction over the body, then lay down quickly in the tub for not longer than two or three seconds, and then dry yourself by means of as course a towel as your skin will allow and plenty of rubbing with the bare hands afterwards. He or she that tries this once will try it often. The increased power and refreshing influence of the bath amply repays for the trouble.

In ancient times the Romans at first used baths but seldom, and only for health and cleanliness; but afterwards as a luxury. They were taken after exercise, and previous to the principal meal, and sometimes after eating to promote digestion. As time went on they took various kinds of exercise before bathing.

BREATH.

"My breath came gaspingly and thick."—BYRON.

Many athletes do not habitually breathe deep enough to maintain the lungs in good working order. Every person at each inspiration, (except it be in a close stuffy, ill-ventilated room) should inhale a full breath at each inspiration, in this way the vital capacity of the individual will be greatly increased.

Prior to any severe physical or mental feat breathing very deeply for a few moments eliminates all effete matters from the lungs, and starts the heart into good working order, even before the event begins; this is worth seconds in a race.

Some riders go "all through" with their teeth very firmly set. It is very easy to remember: "Keep your mouth shut."

Habitual deep breathing strengthens and improves the tone of the voice.

CONSTITUTION.

"I did think by the excellent constitution of thy leg, it was formed under the star of a galliard."—Shakespeare.

The embryo racing man should consult a rational medical practitioner, who is an active cycler, prior to entering the racing arena, and should he prove to be physically sound, and have a heart like a lion and a good head, it only remains for him to use that animated mass of protoplasm, without abusing it to become a shining light on the path.

Given a sound physique, bull-dog courage, good form, good head, and attention to detail, these are the potent factors from which champions are evolved.

On the other hand should some flaw be discovered in his physique, he may be debarred from racing, yet, the greatest pleasure is his—by riding slowly and always stopping short of fatigue, and never allowing himself to make an effort, no harm can possibly occur from its use; on the other hand much good must result.

Cycle racing to be a success means light regular work, and very much of it. However, a man's training days should be as happy as any in his life time. The robust man, full of life and vigor, only basks, and delights in light regular work; be that but honorable and profitable.

No man can do himself justice on the path, if he has business-worry, mental-worry of any kind, fits of ill-temper, sorrow, affliction or mental disturbance whatever.

Where the mind is filled with hope and sunshine, so to speak, the body is capable of doing just three times the amount of work without injury.

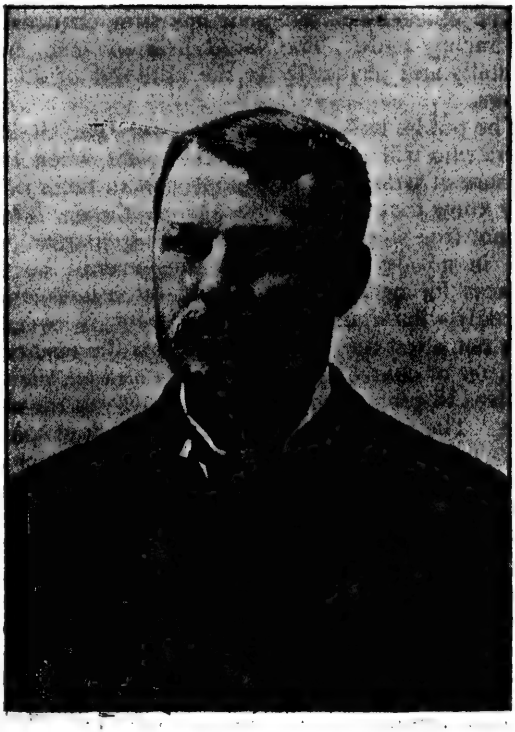
Public opinion is fickle and no matter how creditable a preformance may be, generally it is not appreciated unless it is victory, public sympathy invariably goes with the winner.

The chicken-hearted man has slim chances on the racing path. The large hearted man, both mentally and physically is the admired of all admirers.

The public have no sympathy for that class of riders who will contest in every event when they are sure of winning, but cannot start in races when they know that chances are against them. These are not true sportsmen. The true sportsman will ride in a fair proportion of the events, be the chances for or against him, and oftentimes unexpectedly wins. And when the event is over, he does not boast nor envy, but accepts the results as a matter of course, and when he is defeated, silently resolves to prepare more carefully and win the next time. The rider that cannot take the true sportsman's part had better select an easy seat under an umbrella, or a shady place on the grand stand, and look at others racing.

Some riders even consider it a disgrace to be defeated. There are times when this would be true, on the other hand, many a rider has finished considerably in the rear, yet considering the facilities he has had for "getting into form" his performance may have been much better than the winners. If at all "fit" a rider will learn more, and feel better (if he puts his false pride in his pocket) in the race though last to cross the tape, than sitting on the grand stand.

We have frequently been asked, "Why is it that A. A. Zimmerman is the fleetest racing cyclist living?" The cause is easy to explain. Did you ever examine a greyhound? Did you ever examine an English thoroughbred horse? The analogy is apparent. A pug dog (lymphatic temperament) or a Clyde horse are not built for speed.



W. K. McNAUGHT, Toronto, Ont.,

PRESIDENT ATHENAEUM CLUB.

Ex-Pres. National Lacrosse Association.

Author "Lacrosse, and How to Play It."

CAUTION.

"In way of caution I must tell you."—Shakespeare.

The fact that riders not "fit" must not compete in races or exert themselves cannot be too strongly emphasized. Permanent injury, or even death may result.

Again, racing men, when going out of condition at the close of the season, should do so very gradually and lessen the quantity of food taken.

If it is not possible to use a cycle they should take plenty of exercise, walking, skating, snow-shoeing, snow shovelling and wood sawing can be advantageously followed, during the winter season.

What must become of the athlete whose whole and sole object is training. The athlete or cyclist whose whole career is given up to training that knows no cessation to feats that are calculated to keep the bow always bent is simply laying the foundation of his physical ruin. It is a repetition of the fruit so lovely to the eye, yet with a canker at its core. By all means let us have the widest possible diffusion of physical education; let the culture of the body be as sacred and as serious as the training of the mind. But the ideal of *mens sana in corpere sans* is not achieved by this inane rush after records; quite the reverse, physical condition overdone is providing the unhealthy body. Only too soon nature will give some premonitory symptom to tell the enthusiast that he has overstepped the mark, has forgotten where healthy exercise leaves off and a ruined constitution begins. Moderation is needed in all things, in athleticism and cycling as in everything else.

The racing man must take every care of himself. It is a mistake for a man to exhaust more energy than nature can supply. Long life does not consist quite so much in robust colors as it does in healthy respiration. A racer is prone to stand exposed to currents of air while in racing attire, and

thus cause the pores of the skin to close up and force the lungs to do the elimination work of both organs. Over exertion brings on a functional disorder, and if persisted in will soon become organic. If a rider has sufficient stamina to ride fast for three miles, he may with impunity race for two miles; but when a rider whose abilities are measured by three miles undertakes to race for three miles he is calling upon his physical force on promissory notes, payable often after death. Unless some care is manifested cycle racing will be classed with other brute sports, and many a gentleman's individuality will be lost in the fact that he has become the toy of the public. The same applies to hill climbing, which is done in bravado, often, when enjoyment and good sense prompt one to walk up hill.

In the actual contest never look behind you, many a rider has been seriously injured in so doing. If you cannot resist the habit,—insure your life for a large sum.

DEPORTMENT.

The gravity of his deportment carried him safe through many difficulties.—Swift.

"Prepare yourselves for the world as the athletes used to do for their exercises; oil your mind and manners to give them the necessary suppleness and flexibility; strength alone will not do."

"The courtesies of a small and trivial character are the ones which strike deepest to the grateful and appreciating heart. It is the picayune compliments which are the most appreciated; far more than the double ones which we sometimes pay."

"Honor and fame from no condition rise;
Act well thy part: there all the honor lies."

Quit yourselves like men.—1 Sam. 1, 9.

We cannot suggest anything better than the lady's answer, who, on being asked for her definition of a gentlemen pointed to the fifteenth Psalm of David. *Quod vide.*

There are times in every man's life when to be even coldly courteous makes an exhausting draught on one's patience; but silently to devour many of the chagrins of life, and to maintain a respectful bearing towards others, even under circumstances of vexation and trial, is not only a Christian duty, but worldly policy.

"Never to blend our policy or our pride
With sorrow to the meanest thing that feels."

What can give more happiness to a cyclist than the inward consciousness that he has on each and every occasion spoken truly and acted rightly to all riders with whom he has come in contact?

It is equally as great an honor to any cyclist to act the part of a gentleman at all times as it is to ride a mile in two minutes.

"Who steals my purse steals trash,
'Tis something, nothing,
'Twas mine—'tis his,
And has been slave to thousands.
But he who filches from me my good name
Robs me of that which not enriches him
And makes me poor indeed."—Shakspeare.

"Let no man hope your soul enslave;
Be independent generous, brave!
Your father—such example gave,
And such revere;
But be admonished by his grace
And think and fear."

DISCRETION.

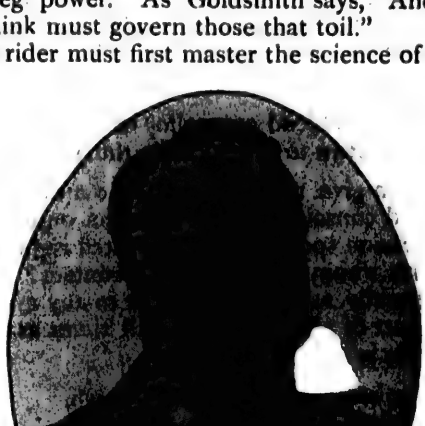
"The greatest parts without discretion may be fatal to their owner."—Hume.

The art of race riding can be acquired by careful attention to details, and studious observance of the tactics resorted to by the "electric stars" of the path; and many engage in contests for years without success, not because they have not speed, but

because their effort was not made at the proper moment they are said to lack head.

Head power is of more value to a racing man than leg power. As Goldsmith says, "And those that think must govern those that toil."

The rider must first master the science of racing.



F. MITCHELL,

CAPTAIN S. B. C., SARNIA.

He can learn this from books, and then he knows what to do and how to do it. After this he will very soon be able to master the art or apply that science by close observation and practice in the company of old and accomplished flyers of the path.

DRESS.

"Prove that ever I dress handsome till thy return."
—Shakspeare.

In touring or cycling before or after sunset, or when the atmosphere is cold the rider should wear

heavy all-wool garments, covering the neck, wrists, and ankles thinly but warm. Many people habitually cover their necks heavily, then on slight exertion the parts perspire, thence they pull the covering down and allow the cold air to chill the part, and a congestion or sore throat is the result. The proper method is, cover the throat very thinly, just enough to break the force of wind, and not so warm as the rest of the body. Discard belts, garters, etc.

We cannot admire fast or bright colors, especially when used in the form of stripes, giving the rider a serpentine appearance All clothing should be kept dry and scrupulously clean, and at least well aired after each time it has been worn, as it absorbs effete exudations from the skin, hence clean and dry garments aid the action of the skin. Avoid chills.

For actual racing thin wool garments are best, (some recommend camel hair, silk or cashmere,) leaving arms and forearms bare, legs also bare, thighs being covered as far down as the knee. Socks or well-fitting shoes should be worn to keep grit from working in and irritating the feet. If the weather is at all cold the rider will make a far faster pace with neck, wrists and ankles warmly covered. (See Dress, fol. 27.)

DRINK.

"There lies she with the blessed gods in bliss,
There drinks the nectar with ambrosia mixed."- Spencer.

The well-trained athlete who is in good "fit," and breathes properly will not require very much drink. Water as hot as is comfortable to the palate is an excellent drink and safe under all circumstances.

My ears have not yet drunk a hundred words
Of that tongue's uttering.—Shakespeare.

Water and milk equal parts taken hot. Hot water and sugar,—sugar produces energy. Fresh Butter-milk.—(See Liquids fol. 121.)

FIT.

That time (train slowly) best fits the work.—Shakespeare.

The chief mistakes of trainers has been to work too rapidly, to over-train. Thus when the one over-trained comes to the contest, while he may he strong and well developed, he finds that he has not the endurance that is essential. The usual cause is overwork. A rider in a contest who is a little undertrained will do better than the one who is equally over-trained. An excellent rule is "Follow your feelings." A rider should not practice so that he loses his "go" the next day; he should not feel lame or fatigued. A fair, or small amount of practice taken every day will put and keep a rider in better form than very much taken only once or twice a week. Another error that beginners are very apt to make is to endeavor by force of will to make up for this lack of form. Day after day they will force themselves through the exercise that they have laid down for themselves, even though muscles are lame right along, and they feel quite unlike anything so vigorous as fast riding. In most instances this is a mistake. A rider should always feel like doing his work. Certainly, we are not referring to lazy men; they would better find easy shady seats on the grand stand and criticise those who are doing the riding and securing the trophies.

To do his best riding a man does not want to do best riding all around every day, by any means, strange as this may seem, he would only grow worse day by day if he attempted it. A rider may overwork in two ways; by one day's work that is far too much for him, or by doing a little more every day than he should. In this way he does not recover from one over-work till another is added, and so on day by day. If a rider is sore and lame, let him do very little real fast riding till he feels himself again.

There are other causes for a lack of condition; excessive mental work, emotional strain, anxiety,

will each prevent a man from getting into first-class condition. Eating rich cakes, heavy crusted pies and a large amount of fat in hot weather, or irregular meals, loss of sleep, etc., are each potent in the same direction. During training, a man's sexual nature must be entirely restrained if he would do his best. A man cannot have sexual excitement, even though it be only mental, and at the same time be putting the most into his physique. We say, even though it be entirely in his mind. The physical results are not much less draining of power in this case than when the indulgences are more than mental. This is the product of experience, and is in accord with science.

For some days before an important meet a rider should do but very little work. He should eat, sleep and dress as usual, but, instead of taking his practice spins, let him lounge about in the open air, or watch others work. A rider should enter the race feeling elastic, buoyant, strong, vigorous, light, clear-headed and courageous. He is then in good form.

During primary practice many riders experience at times a sharp pain in the side usually called "stitch" and is caused by the pleura or coverings of the lung rubbing together during hurried breathing. Do not ride so fast for a few days, it will disappear when you get into good "fit."

FOOD.

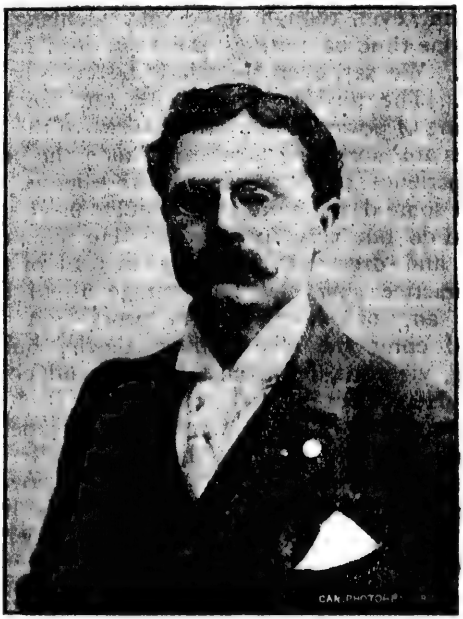
The wise man never eats whilst under mental worry, soon after severe exercise, or when unduly fatigued. Agreeable companions, tasty arranged viands, well prepared comestibles all tend to increase the appetite and aid digestion.

Without knowing the constitution of the person it is impossible to state what he should or what he should not eat.

GENERAL RULES.

Masticate slowly. Always leave the table feel-

ing that you could have eaten more. Don't drink while eating. An adult man requires about 5 pints of liquid daily; about two of these are contained in the food, hence that leaves three to be taken as liquids or one pint after each meal. It agrees



W. A. HUNTER,

PRESIDENT C. W. A., TORONTO, ONT.

better with most people to take the liquid allowance, an hour or an hour and a half before the meals.

Breakfast, say porridge made of rolled oates or wheat grains, or occasionally corn meal, eggs (many cannot eat meat after porridge,) broiled beef, mutton, toast, white bread, brown bread, one only,

mealy potatoe moderate size, milk, custard. Boiled eggs as follows :—into a pot containing 2 quarts of boiling water place an egg and be careful not to crack it in the act, at the same time lift the pot from the stove and set it upon the lid on stove, let it remain until cooked to suit taste (from 5 to 15 minutes.) It will be found to be cooked alike from centre to shell,—like a jelly.

Dinner, say, two ounces soup, without solids (this increases gastric juice) then, best roast beef, or mutton procurable, one only mealy potatoe, moderate size, with occasional dishes of fresh salmon, white fish, poultry or game. Tapioca, rice, sago or bread puddings made with milk and eggs, butter used sparingly a little aids digestion, much retards, same may be said of fats, corncake.

Supper, say, bread and milk, toast and biscuits, oatmeal gruel, some men require meat three times a day, with others once will suffice, stewed fruit, tea, coffee or cocoa. White bread with raisins in it is recommended being laxative.

Never eat that which you cannot easily digest. All bread should be one day old before eating. Home-made bread without soda or alum is best. Yeast powder, or yeast as it comes from the brewers may be used to lighten it.

A friend of the writer's prefers beef-tea and beans as a touring diet—We would suggest to add a little fat to make it a complete diet. Another one prefers rye whiskey and water, and beans and bacon preserved in tins.—(See chap. on Food.)

FORM.

"Thus formed for speed, he challenges the wind."—Dryden.

Speed depends largely upon the "form" adopted by the rider. This is one of the most important factors in racing. Set the pedal well towards the toe for path work, place them well back for road work, in order to make use of thigh-thrust and body-weight. Moving shoulders hips or head, is

power actually lost. When the rider wishes to exert all his strength, the idea is not to work in jerks or separate efforts of any kind, but to concentrate the powers of both arms and legs into one focus —an act difficult to describe but easy to recognize when put in practice—and keep tense, working smoothly all in one piece. This looks infinitely better than laboring plunges, and is quite as effective, especially in taking hills. The best riders almost invariably show their exertion least.

Form is so potent that the man who does not cultivate it will make about as much progress as Penelope, the wife of Ulysses did when she labored all day making a web or robe for Laertes, who was seeking her hand in the absence of her husband in the wars, whom she declined answering until it was completed. She continued to delay by undoing by night her day's work.

A rider may be in almost perfect fit yet hath he not head to apply form to the best effect it availeth him nothing. It is the tidal wave in the course of his training career, and if not acquired,—

"There is a tide in the affairs of men,
Which taken at the flood leads on to fortune;
Omitted all the voyage of their life,
Is bound in shallows and in miseries.
On such a full sea are we now afloat;
And we must take the current when it serves,
Or lose our ventures."—Shakespeare.

HANDICAP.

Providing the men are all well placed, each rider is forced to ride "all through." The mental strain will be the greatest in the limit men, for fear of those in the rear overtaking then, therefore the waste products accumulating in the system will be greater, and they will become "baked" sooner than the scratch men. This is essentially the "stayers" race. The scratch men, can increase their chances of winning and can also make the fastest time by

alternately sharing the pace making. In long distance events it will be observed that when one rider overtakes another he generally eases the pace for a few moments, then is the opportunity for another coming up to obtain the lead. The handicap rider must not start away at a pace faster than he can maintain to the end, nor must he sprint with others during the race but will wait until near the finish before he makes the final explosion of nerve force.

INFLUENCE.

"Heaven doth with us, as we with torches do:
Not light them for themselves; for if our virtues
Did not go forth of us, 'twere all alike
As if we had them not.—Shakespeare.

That the mind has an immense control over the body, especially in human beings who are several removes from the brute, has been long acknowledged. The same in one thing as in another. The marksman shooting at the target will assure you he can generally tell when his finger presses the trigger, whether the shot is going to be good or bad. If he goes out in the morning full of hope and is full of confidence at the time of shooting, history will tell you his score is almost invariably a fine one, depending of course upon his possibilities as a marksman. The same with cycling. The mind exercises some wonderful effects over the body in this sport.

"Frame your mind to mirth and merriment,
Which bars a thousand harms and lengthens life."—
Shakespeare.

A few months ago a man was riding a "Raleigh" and as that, "wheelman homeward plods his weary way," his cycle kept up a continued squeaking. Runs hard, thought the rider. He oiled the bearings yet it continued just the same. The consequence was, that he expended so much nervous force in thinking that squeak was caused by a tight bearing, that upon arriving at his destination he was completely tired out.



Yours faithfully
A. T. Davis

"Jog on, jog on, the footpath way,
And merrily hint the still—a;
A merry heart goes all the way,
Your sad tires in a mile—a."—Winter's tale.

Give a man a cycle, that he has not confidence in, and he will never amount to much as a rider. When a rider hears "only two laps more" how he brightens and strengthens, the mind cheers him on, and the body pulls itself together, and he races in fresh as at the start. The reaction however, soon comes. A rider starting in any event with the idea that he will not win, nine chances out of ten he will not, although, the power was his to do.

LINIMENT.

"A goodly medicine for mine aching bones."—Shakespeare.

16 ounces vinegar,
4 ounces oil turpentine,
4 raw eggs (whites only,) well beaten.

To be well rubbed in, a warm bath taken before it is applied will increase its action. Sprains, bruises, and stiffness disappear as if by magic under an energetic application of this remedy.

Before race events many riders are troubled with sympathetic diarrhœa—consult a cycling medical practitioner.

For slight cuts, abrasions, etc., wash out all foreign substances with water that has been boiled (to free it from germs) or water having a few drops of creoline in it. Then dress with cotton-wool (antiseptic) saturated with creoline and water and bandage over all. If at all serious, and you wish a

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The subject of the preceding cut is

H. P. DAVIES, TORONTO, ONT.

1 MILE CANADIAN CHAMPION, 1887.

Won 134 out of 138 events during his racing career.

MANAGER JOHN GRIFFITH CO.

speedy recovery and to avoid scars after healing, consult a surgeon, preferably one that is a cycler.

The addition of a little chloroform to any alkaline liniment will greatly increase its action.

For aches, pains, etc., see a cycling medical practitioner, or apply the following:

"Press me closer, all my own,
Warms my heart for thee alone,
Every sense responsive thrills,
Each caress my being fills;
Rest and peace in vain I crave,
In ecstasy I live thy slave;
Dowered with hope, with promise blest,
Thou dost reign upon my breast;
Closer still, for I am thine,
Burns my heart, for thou art mine;
Thou the message, I the wire,
I the furnace, thou the fire,
I the servant, thou the master—
Roaring, red-hot "Mustard Plaster."

LOAFING.

You cannot remove a disease by discovering the cause, but it is the first and most necessary step towards treatment. Starting with the fact (which is acknowledged by all racing men,) that one man cannot possibly lead at a pace and retain any chance of winning, and bearing in mind the physiological fact that carbonic acid gas is exceedingly volatile, and that a very short rest is sufficient to restore the balance of formation and exhalation, we consider that if riders of equal calibre starting in a scratch race, in which there are no pace-makers, going for time medals or lap prizes, were to make a mutual agreement to share the pacing at a fair gait, and honorably carry out their compact, the difficulty would be half solved. For instance, four men starting in a mile scratch race would draw for positions, and the one taking "No. 1" would lead at a good pace for the first 300 yards. "No. 2" for the

second 300 yards, and so on, until the end of 1,200 yards, they each would have done an equal share of the pacing, and the man who led the last 300 yards and therefore would be at a slight disadvantage, would find compensation for that disadvantage in having the inside position. Then there would be 560 yards left for the fishing for position, and the final spurt. The result would probably be a mile in 2.30 instead of 3.00 minutes, and none of the riders would be the worse for his share in leading. In longer contests pacing could be arranged lap by lap. That the plan be a success, each contestant would require to act his part honorably.

This, above all, to thine own self be true,
And it must follow, as the night the day,
Thou canst not then be false to any man —Shakespeare.

The concensus of opinion is "fast runs" attract the public, and therefore it stands to reason that fast racing means more of the sinews of war to the promoters. We understand this is the method followed by Messrs. Robertson, Orr and Doolittle, official timers.

(By the renowned writer, R. J. Mecredy, in Irish Cyclist.)

To ride, or not to ride—that is the question—
Whether 'twere nobler in the mind to suffer
The taunts and jeers of some outrageous duffer,
Or to go plugging through a sea of loafers,
And having caught them, lead them—to lead, to pace.

To pace! perchance to lose—ah! there's the rub;
For in that losing what reports may rise,
That we have shuffled, swindled—sold the race,
First taking odds against our noble selves,
Then waltzing in a miserable third;
Whilst in our inmost heart of hearts we know
We lost the race through magnanimity.

Who would records break,
And groan and sweat around a cinder track,
If to uphold the records one has made,
One has to go "all through" in every race,
And be out-sprinted in the final rush?
Oh! mindless dolts, who preach but practice not,
Denouncing those who play a waiting game,
And doubly blaming those who go "all through,"
Say, what's a wretched racing man to do?



C. MACKENZIE,

1ST LIEUTENANT S. B. C., SARNIA,

MASSAGE.

The term "massage" is derived from the Arab word "mass," which signifies "to knead."

The arteries in man convey the blood from the heart to the tissues. The veins in man convey the blood from the tissues to the heart. The former in

cases of wounds as regards loss of blood are most dangerous, hence they are generally speaking placed deep in the body; whilst the veins are generally speaking placed much nearer the surface. Therefore the direction of all veins being towards the heart, the process of rubbing should be the same, i. e., from toes toward heart—from fingers to shoulder—from head to heart. Hence the process, generallv speaking, is practically rubbing up—not rubbing down, as many writers term it. The rubbing towards heart process is one of the most important factors in training, and it is the one often overlooked or performed in a half-hearted manner. The need of better dressing-rooms in connection with our Canadian tracks is here manifest. Many trainers consider that when the rider dismounts, and hastens out of draughts into the dressing-room that they should encourage the perspiration to flow as long as possible. Now this is when the trainer's judgment is needed. Some men require, or are better for losing much; most riders cannot bear the loss, at least not in any great quantity. The rider sits or reclines, some prefer to stand, immediately on his coming into the dressing-room, he is covered lightly or warmly with woolen material as occasion requires for a few moments, the skin soon becomes moist. The trainer then begins a gentle friction with a fairly rough towel to dry the skin. To hastily dry a rider and hurry him into his clothing and send him off at once, would be dangerous from the fact that his skin would again become moist, and hence it would be very easy to contract a chill. This massage may be continued from 10 minutes to an hour according to circumstances.

Massage by friction consists in rubbing, rolling under the fingers, and gently pinching the skin, and rubbing, tapping, kneading, and exercising the muscles and joints. Beginning at an extremity, the foot for example, the skin is taken up between the thumb and fingers and rolled and pressed; then

the muscular masses are well grasped, rolled and pressed and kneaded, and rapidly tapped a quick succession of light blows; and then each articulation is in turn put through all of its motions. Even the muscles of the neck and the small muscles between the ribs may be subjected to the same treatment. In fact no part of the body should be omitted except the face.

The good effects of massage are popularly ascribed to electrical or supernatural agency. That electrical currents are induced by massage is true, but the curative effects in case of diseases are attributable to other agencies.

The masseur or rubber puts forth more or less muscular power, which at the points of contact or friction developes or is transformed into another mode of motion—heat. The vessels dilate and an increased quantity of blood enters them, and the motion of the blood current is accelerated. The immediate effect of these changes is to promote the nutritive energy of the tissues subjected to friction. The result is seen in the improved color, warmth, and volume of the parts.

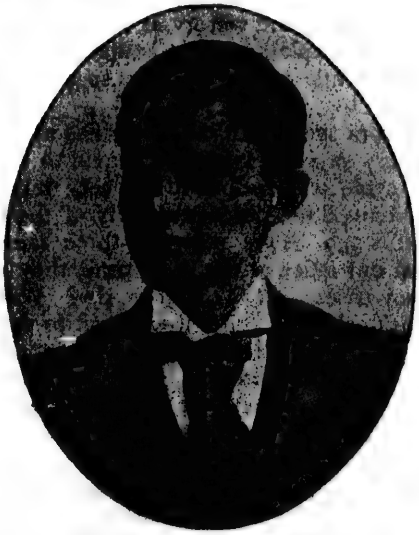
The masseur or trainer, should be a healthy and cheerful tempered person, he will then have much magic influence over the rider.

The temperature generally rises one degree. The body increases in weight; all the organic functions are performed with more energy, and power is gained in every way. Massage in its several forms exercises peculiar effects on the nervous system, which should not be overlooked. When an inflamed part which can be manipulated, a joint for example, is rubbed with excessive gentleness, the sensibility which was at first so acute that every touch gave pain, rapidly subsides, until, after an hour of friction, it may be handled with some roughness, without evoking painful sensations. When the local condition is that of pain merely, it is remarkable how the acutest suffering is alleviated by

persistent friction of a gentle kind. Again, the state of spasm of a muscle is relieved and relaxation induced by persevering rubbing of the affected muscle. Results such as these are explicable only on the theory that the gentle titillation of the end organs of the branches of the nerves has so far lowered their irritability that they cease to receive and transmit painful impressions. The rapid and long continued transference to the centres of conscious impressions of the gentle titillations of the end-organs allays the irritability of the centre, so that, if pain be transmitted, it excites no reaction and therefore is not realized.

A person returning from a residence in a hot climate, where his skin has habitually acted very freely, finds on his return to a colder climate, that under slight exertion he still continues to perspire very readily.

Massage is a popular remedy for spinal irritation or nervous weakness.



J. C. CLARK, TREASURER S. B. C., SARNIA.

PRACTICE—ANTI.

"These I call original, or primary qualities of body."—Locke.

"Know ye not that they which run in a race run all, but one receiveth the prize? So run that ye may obtain, and every man that striveth for the mastery is temperate in all things."

The individual who strives to become an accomplished and expert cyclist, must cultivate the habit of using his mind as well as training his body. Without good head work, action and stamina are void of their very essence. The object aimed at is not so much the acquiring of strength, endurance and agility, (these will come imperceptibly) as it is to be able, when the occasion demands it to use what strength one has to the best advantage. Hence it is that after years of careful practice some men can use almost all their power to the best advantage, whilst others cannot apply one half they possess, therefore the victory is not always to the strong. This explains why it is that one rider who is physically inferior to another is so much the better athlete.

Apart from the honors and trophies won, it is at times a very valuable accomplishment to be able to mount a cycle and propel it at a very rapid pace. We experienced the practical utility of the cycle a few months ago. One morning three messengers arrived at our office at the same time, they were all emergency cases. What could we do? While they were considering, we did a flying visit to each, and within a few hours attended each during the crisis —all did well. Without a cycle we would have been forced to drop at least one case out of the three. Ability to ride is not without value.

That eminent divine, Martin Luther, had a muscular development which would have enabled him to thrash any five of his persecutors, if it had been christian so to do.

Rev. T. De Witt Talmage goes to the park wherever he may be, when at all practicable, and runs his quarter and half mile on the day previous to his preaching. Many may think this is foolish. What does he do it for? It exercises his air cells, and strengthens his voice, and the superabundance of fresh air inhaled renews his whole being.

Alcoholic stimulants, tobacco, venery, excessive imbibition of liquids, cotton garments, and unwholesome edibles must all be discarded.

Many a man has, by injudicious use of self when not "fit," ruined his health. Again, many who were weak, feeble and emaciated, by long continued, careful and systematic use of the cycle, have developed into strong, robust, and well-nourished individuals.

The rider selects a road racing wheel of the same pattern, crank and frame as he will afterwards use on the path, and commences to practice for five or six days during the week. He may ride the first day one mile, the second day two miles, and so on until he rides twenty-five miles, more or less, to suit his strength.

Personally, we prefer beginning and continuing always on the racer. We cannot perceive any advantage by commencing on a road racer or roadster. Every change one makes requires new education for the muscles.

On the seventh day rest, the fact has been demonstrated time and again, that a man can do more labor, mental or physical, in working only six days per week for a year, than if he worked seven days per week. The reason is easy to explain. When God created man His command was to rest on the seventh day. This law cannot be broken without injury to the vital forces of the individual. Besides the inward feeling of guilt for having desecrated the sacred day has a depressing effect, which in turn is transmitted to the muscles, thereby retarding the training process.

He may practice on road or track as he chooses; we recommend the track. The English road racers practice on the road. Should this task be too much for him, he does less; if not enough he does more work, meanwhile paying the strictest attention to attain the very best style, and to do his riding with the least exertion possible, and always stop riding prior to feeling fatigued.

In fact this work is for the very purpose of acquiring good form, of course some improvement in stamina also takes place, nevertheless, during the winter the thoughtful cyclist keeps up his strength by long walks, skating, snow-shoeing, etc.

Punching the bag, the pugilistic style of chest development is in a way helpful as is the home trainer, but the disadvantages are lack of fresh air. If these exercises were performed away from habitations, out in the field where the air is pure, their value would be inconceivably enhanced.

Stamina and speed will be increased in proportion as the form or style improves.

PRACTICE, A. M.

Assuming that the cyclist can afford the time to go to the park; he proceeds thither at that hour during the forenoon most suitable to him, and after a brief rub, dons his heavy, or light (according to his weight) all-wool training suit, which has been washed or well aired, during the interval, a damp or dirty attire is very injurious. If the atmosphere is chilly cover ankles, wrists and base of neck lightly. He rides at half pace as many laps or miles as his time and stamina will permit. He should always stop short of fatigue.

What is the half pace practice for? Is it to develop speed? No, certainly not. Is it to acquire stamina? No! emphatically, no! It is solely to acquire "form," i. e., he should never ride in a careless or indifferent manner. At every revolution of the pedal he should see that there is no lateral

play, no waste of power, and that his ankles are moving freely. He sits loosely yet steadily on his saddle, or his steering will be defective. His whole concentration of mind must be to attain "form," to pedal with the least possible expenditure of strength. This may prove very trying at first, yet persevered in, it will become second nature, and he can ride in the very best "form" without ever a thought of his actions, he may even briefly sleep and dream of honors not yet won. Most riders will require much practice before they arrive at this state of "fit," but when once acquired the rider feels fully repaid, though he should never once compete in a race. The morning practice being completed the bath and massage is now in order.

PRACTICE, P. M.

"In church they are taught to love God; after church they are practiced to love their neighbor." —Laudor.

When the sun is in the west, nervous persons work the best. Again at the hour most suitable to him he goes to the track, has brief rub, dons his racing attire, mounts his wheel and his practice begins—after a few laps have been ridden and the internal machinery is working well, he will spurt, say, 100 yards the first day and increase it very gradually up to that point consistent with his own idiosyncrasies in any case not exceeding ½ mile—indeed in practice from 200 to 300 yards is usually quite enough, this may be repeated as often as the rider can bear. This must not exceed seven times with rest between. He must never leave the track feeling fatigued. He should always leave feeling that he could easily have ridden more. Just the same as in driving horses, if one usually brings his horse home fresh he will bear plenty of driving, but, should he bring a horse home baked he will not bear much driving and what he does do is

with apparent effort. What are these afternoon lessons for? They are solely to acquire pace, and pace only. Just two points to bear in mind—"get pace," "stop short of fatigue."

The aids are—riding before the wind,—down grade and with faster companions. Then bath and massage.

The athlete who is aspiring to championship honors will do well to bear in mind that,—

"He who ascends the mountain top shall find
The loftiest peaks most wrapt in clouds of snow;
He who surpasses or subdues mankind
Must look down on the hate of those below.
Though high above the sea of glory glow,
And far beneath the earth and ocean spread,
Round him are icy rocks, and loudly blow
Contending trumpets on his naked head,
And thus reward the toil that to those summits led.
—Childe Harold's Pilgrimage.

RACE.

"I wield the gauntlet, and
I run the race."—Pope.

The signal being given to start, the most important point for the rider to bear in mind is to have the lead (or inside position if he be able to hold it) on entering the last straight, unless he be yards better than any of his competitors. Next, he must never spurt until he is prepared to cross the tape without slackening. No man living can spurt his best twice in the same heat unless he be allowed to ride at half pace for some minutes in the interval. It is said that A. A. Zimmerman can spurt several times in the same heat at almost his best. Of course every rider knows the exact distance that he can hold his burst of speed before he enters a sharp contest, and, also that it is impossible for a man to make the pace all the way and win, unless he be a very much faster rider than his rivals. As to the advisability of dropping back and coming

with a bird like rush to pass a leader will depend on circumstances, should the leader detect your game and have the same speed, the moment you slackened he would go and you would never be able to regain what was lost, should the leader not observe your game you will probably get considerable lead on him before he got speed on and by going at such a pace that they could not play the same game on you your chances of winning would be good.

Many a race is won in the last five feet by the leader slackening on the tape, or worse, looking around and endangering himself and those near him.

Should you be leading and a competitor draw even on the last straight, do not imagine you are beaten; he is probably more fatigued than you are —the best head will win,

> **"For oftentimes when Pegasus seems winning**
> **The race, he sprains a wing, and down we tend,**
> **Like Lucifer, when hurled from heaven for sinning."**
>
> **—Don Juan.**

The rider having the head that can observe at a glance how the game is progressing, and can determine instantaneously what to do, and can put his thoughts into action, and when he gets moving to continue it without slackening, or looking around, until the tape is crossed, has at least, some qualities to his credit.

Such tactics as diverting a rival's mind when about to make his effort, or doing acts to cause mental worry, cutting in close before a rider, pocketing, or joining in any conspiracy to defeat a faster man are all beneath a well-bred man, and should be stamped out by every rider. It lowers the dignity of the sport, and cannot do any lasting good to any one.

THE CYCLER AT OLYMPIA.

Speeds he not well, you cycler in the race,
  As noiselessly he cleaves the air in twain?
Bears he not courage on his manly face?
  The flower, the glory of Olympia's plains.
The assembled multitude with loud acclaim
Declare him victory's choice, the hero of the game.

See now, he loses ground, anon he gains,
  Each tensioned muscle yields a ready play,
And yet again a weariness he feigns.
  God! give him strength at last to win the day;
Send fire from heaven to aid the waning light,
And prove your favored son a hero in his might.

Re-echoed cheers go up from that vast throng,
  Archons, and senators, and judges vie
To swell the tumult as he pedals along
  To where the victory and the trophies lie.
Hope, trembling in the last extreme of fate,
Scarce shows her buoyant form, or dares to stand elate.

Exultant moment! See, the goal is won;
  His friends salute him, bear him from the field.
Bocotia, reverently embrace thy son,
  Unto his name a ready homage yield;
In his province honor him with power,
And bless his future life with fame's perpetual dower.

[A. L. HENDERSON.]

RACE—LONG.

Things won are done, joys soul lies in the doing.—Shakspere.

A very ancient proverb says it is the pace that kills, and pace unwisely used in such a race will wipe the man out early in the contest; but a wise use of pace is quite another thing, and the capacity to ride 24 or 25 miles an hour need not be regarded as a drawback when entering upon a preparation for a 24 hours' race, always providing, of course, that the

possessor of this gift is prepared to use it wisely. There are men who if rattled along at the rate of 23 miles an hour would soon drop out; equally there are men good for 25 miles in the hour. A pace of 20 miles an hour, then, would be a trifle for the one and not a too tremendous task for the



W. R. PAUL,

SECRETARY, S. B. C., SARNIA.

other, yet 10 miles an hour, allowing one hour's rest means nearly 500 miles in the 24 hours. Holbein's average is a trifle over 15 an hour under disadvantageous circumstances as regards matters. What the prospective competitor has to accomplish in this: He has to (1) learn to control his pace, (2) to develop his staying powers, (3) to dress comfortably, (4) to be shod comfortably. (1) The control of pace can only be got with the aid of a coach with a watch, and frequent trials and tests. (2)

Staying form may be gained by steady track work. (3) Comfort in dress is a *sine qua non* in distance journeys. Many men ride in short path races in garments which would drive them crazy if worn in a long race. Every seam and every loose edge becomes an intolerable worry—tightness here, looseness there, heretofore unnoticed, develop the terrible worries; more especially is anything tight on the knee a worry.

Every seam and rib and rough joint should be rubbed down with a piece of yellow soap and vaseline, and Fuller's earth should be handy. Needless to say, the saddle should be mounted on springs, and should be an old friend, not a new acquaintance. (4) As to foot-gear, it is absolutely imperative that this should be fully and carefully tested before the race.

To make sure of a successful distance shoe, the rider must get one a fraction too big all over; it should have a Jaeger sock at the bottom—have a very stiff sole with smallish blocks, ½ inch inside the pedal plate, to allow of slight shifting, a great luxury. They should be cut low, and a knitted or very light cashmere garter or strap should be worn to exclude grit. A thick, soft woolen sock should be worn, and be well soaped or vaselined before being put on. If properly experimented with all these points may be settled upon the road except dress and saddle, and in case of these latter careful and exhaustive trials should be made. All distance men know well the importance of keeping the ankles and wrists warm, and care on this point also may mean all the difference between success and failure. One great point remains to be urged on all possible competitors—DO NOT BE IN A HURRY, begin your work at once, and ride steadily, study economy in your action and the saving of your energies, try and detect—or get a competent observer to point out to you—any awkward or ineffective action you may have acquired, but the object in

this case is not to get rid of so much weight in a hurry, but rather to nurse the superfluous weight so as to get the greatest amount of steady work without getting too fine and then "going stale."

It is only by constant practice and hard training that the road scorcher can ride for the space of fourteen to twenty-four hours practically without stoppages, and even then he must first be possessed of thorough good staying powers. The ordinary cyclist, who thinks it somewhat of a feat to sit in the saddle for ten hours a day, with frequent stops, wonders how the famous long-distance riders stand the strain. Training, practice, and the light but strong cycle is the secret.

What do long-distance riders eat and drink? is a question which is constantly being asked. Very little. Holbein, the holder of the twenty-four hours' record, prior to Frank Shorland's day, takes hardly anything more than beef tea. This is meat and drink to him. Very few riders eat solids after the first fifty miles of a long ride, simply because they cannot digest them. The stomach refuses such substantial food. Eggs and milk, eggs and tea, milk pudding, calves-foot jelly, beef-tea, beef suet, grapes, fruit of various kinds, are all favorite articles of consumption. They are sufficient to replenish the inner fire and "keep up steam."

Pace-makers are a great help to the record-breaker. These are simply friendly riders who meet the would-be record-breaker at various points in the road, and ride in front of him to keep the wind off, pick the road for him, etc., so that he has little or no anxiety. Each pacemaker rides a certain distance; then another is in waiting. The man in waiting generally has some food prepared, which he hands to the cyclist as he rides through, and thus no time is lost.

Imagine everything to be ready for an attempt at record. An official timekeeper starts the man off; away goes the ambitious one, carrying only

some food in a little bag attached to his handle-bar. He rides almost at top speed, and in the first hour of a fourteen hours' ride would perhaps cover within half a mile of what he could do were he to ride his best for the full hour. He depends upon his condition to pull him through. After the first hour his speed grows a little slower, the edge of his energy being worn off, and he settles down to steady work, his various pacemakers giving him a lead.

In a hundred miles' run the majority of men begin to feel the effects at about seventy miles—perhaps before. The rider has taken little food and has a faintness, but he must keep plodding on. If he does this the faintness generally goes away, and especially if he is able to partake of some sustenance. Many times he feels so exhausted that he can scarcely sit on his machine, but the only remedy is to keep going, even if it is but slowly. It is here where so many riders give way. They will not persevere until they get rid of the faintness. A man has to be a thorough stayer to do it, but all riders, even the best of stayers—Holbein, G. P. Mills and others—are subject to 'bad times.' When once this is overcome the rider goes quite easily again.

He may have been unable to ride fifteen miles an hour, say, at one portion of the journey, but shortly afterwards he plucks up and rides almost as fast as ever. In the last few miles a man can generally squeeze out of himself a final effort, and many times even after a hard run of 100 miles the best of riders are only just able to keep with him at the finish. Usually, when in the best condition, after the rider has finished, a couple of minutes' rest makes him feel quite fresh again. It is not until an hour afterwards that he feels he has been putting himself to some big exertion. The stiffness gets hold of him then. When in his best form he should be all right the next day, and towards even-

ing he will have the appetite of a horse. The day after that he will feel quite right for another long journey, though it is advisable to take four or five days' rest before anything else is attempted.

I have mentioned only 100 miles' rides, but the same rule applies to twenty-four hours' contests, with this exception, that whereas a man in good form only has one 'bad time' in 100 miles, and sometimes not even that, during a twenty-fours' ride he will have several. About twelve o'clock in the day is usually a crisis, i. e., twelve hours from the start. A rider may have previously been covering fifteen or sixteen miles an hour, and then he finds he goes to pieces and can't ride thirteen. If he eats anything his stomach rejects it, and for a couple of hours he may be in a bad plight, but he must go on. To stop is fatal. Time is lost and strength is not regained any quicker. Let him keep on, even though sick and fatigued. He will recover and be able to ride his old pace again and feel quite right.

Do such severe strains on the system injure men? My opinion, based on a wide enquiry from men who have taken part in long-distance races of all descriptions, walking, running and cycling, is that they don't, provided one thing is observed, namely, never to attempt such feats except when thoroughly trained. I have felt more after effects from a ride of 10 miles when out of condition than from 100 when thoroughly trained. It is the man who rides long journeys without preparation who injures himself, not the trained rider.

When you are driving at a fair speed on the public road and are overtaken by an individual who is keeping his horse moving at almost racing speed, and drives past you, then you may rationally conclude that he is driving a livery horse, or that he is drunk, or that he is arfool. It matters not! The prevention of cruelty to animals "laws" are too elastic. It is anything but gentlemanly conduct to

race on the public road. What are race courses for? However, we do not see any impropriety in the acts of a cycler propelling his wheel at a 15 or 20 mile an hour gait on the rood, providing he has the ability, without making an effort, so to do. Verily! Messrs. Midgley and Webber noted American racers, both succumbed to typhoid fever brought on by over-exertion after they had gone stale. Yet to the athlete who is in good fit, and circumstances being favorable, we cannot conceive how any injury to health can follow fast pedaling.

SHOES.

"Your hose should be ungartered, your shoe untied."—Shakspere.

The shoes are the most important article of dress of the cyclist. They should be made somewhat like a running shoe. The material used should be the very best French calf-skin for uppers, and slaughtered sole leather for the soles. Made neither so tight as to cause pressure, nor so loose as to cause friction; consequently they will never induce corns nor discomfort. They should fit the heel like a glove and the toes like a mitt,—tight about the heel and loose around the toes. Toes cut square for toe-clips. The laces should be flat (not round,) and extend to within an inch of the toe, and well up on the ankle. If round laces are used then hooks in place of eyelets should be used, as pressure on the sensitive muscles of the front of the foot retard their action. The tongue should be broad, thick, and extend an inch or more above the shoe upon the ankle to exclude grit, etc.

The sole of the shoe from the centre of the foot forward should be as broad as the foot and made of two layers of leather, and between them should be placed a flat steel stiffner similar to those used in a lady's corsets. This prevents the sole from bending down when wet.

The outer layer of the sole notched to fit the

pedal, extending across the sole. The sole from centre to heel should be as thin as the upper parts of the shoe. Some writers recommend a single layer tacked on to the heel to prevent stone bruises —this adds to the weight and prevents, to a slight extent, the glove-like fit of the shoe upon the heel. If the rider sits well over his work and depends mainly on the thigh downward thrust he may dispense with the slots and use toe-clips—this will allow him to move his feet fore and aft, say, half an inch during a long race and thus receive rest in the change. Should he sit well back and pin his faith on the "push and pull" action the slots are essential, and many of this class dispense with toe-clips. A steel band over foot like a stirrup is preferable to either, only in case of a fall it would probably be very dangerous. We venture to predict that better contrivances for foot to pedal attachments will e'er long be upon the market, than there are at the present day. The shoes when first worn, if saturated in water and allowed to dry upon the feet will then fit more comfortably. Never lend them—reasons—shape—disease.

(JAMES BRYANT, Market St., Stratford, makes cycling shoes as above described at a reasonable price.)

SLEEP.

"How sweet the moonlight sleeps upon this bank."
Shakspere.

Sleep is attended by a relaxation of the muscles, and the absence of voluntary activity for any rational object or purpose,—complete relaxation of the entire muscular system is essential to sound and healthful sleep.

Sleep is tired nature's sweet restorer.
Oh, how common, but oh, how sweet is sleep!

9.30 p. m. is a good hour at which to retire to rest, reclining on right side favors digestion. The

natural elevation to which the head should be raised in sleep is about the thickness of the wrist, which constitutes the pillow as designed by nature, in resting on the back ; whilst on the side the distance between point of shoulder and neck will be the proper height of pillow.

A mattress should always be used to sleep on,—a feather bed never. Cover chest lightly and moderately warm, and the limbs quite warm, keeping them very slightly flexed.

The bed-room should be thoroughly ventilated during the day, and void of all dampness, at night the window should be kept open at top and bottom, very slightly in winter, and wider in summer. Night air does not injure the lower animals, (brutes) nor will it injure the higher animals—(men.) It is bad air, not night air that is injurious. However, bear in mind that in the recumbent position the circulation is not so vigorous as in the perpendicular, therefore, more covering is necessary to maintain warmth.

Rise whenever enough sleep has been taken, never take more than one sleep after awakening in the morning. Suppose one awakens at 5 o'clock and soon after sleeps again, on awakening this second time rise at once. If the individual lives on plain properly cooked food, keeps the skin active by baths and rubbing and takes plenty of exercise, and lives in peace with his fellow-beings, Insomnia will be a stranger to him.

It is a good habit to stretch one's self for a few moments before rising. Of course these are only general principles, and each individual must modify them to meet his own idiosyncrasies.

Was not the first medical operation performed during sleep ? It pleased God to surgery that rib from Adam's side whilst he slept and made it the maternal ancestor of a race of beings only a little lower than the angels !

There were surgeons long before the days of an Aikins or a Grasett.

No one should retire to sleep soon after a meal, nor when feeling an hungered, in the latter condition take a single biscuit or an ounce of milk and water, or a banana, or twelve seedless raisins, etc.

A good method to induce sleep is, if not suffering from the effects of too little or too much work, close eyes and imagine you see your breath flowing out of your nostrils, at the same time breathing slightly deeper, continue this process until Morpheus presides over thee. All must sleep.

"'Twas always so; when but a child I laid
On mother's breast
My weary little head; e'en then I prayed
As now, for rest."
(From Sir John Macdonald's favorite poem.)

THE SPRINTER.

The sprinter's chief aim is to acquire pace. Pace he must get. To be able to command electric explosions of nerve force, and to maintain a clear, level head is all that is essential to gain honors on the path. From four to six days a week he should practice sprinting in distance say one hundred yards gradually increasing it up to the capabilities of the rider, not exceeding half a mile. Most men are content with 400 yds. If he can hold out 500 yards it is quite an advantage as he can commence his spurt before the bell for the last quarter. Indeed many cannot sprint over 200 yds. To get pace sprinting with the wind down hill or with faster companions are all excellent aids. Some riders can only bear one or two sprints a day, whilst others can gather pace better by five or six. The riders own idiosyncrasies alone can determine this point, and as to the distance riden his own feelings must be the guide. His trainer will determine these details. The trainer will vary his programme, some days he may find it beneficial not to ride at all, another day he may be sent for a fairly long spin at a fair pace or even for a run to the country.

TRAINER.

"My train are men of choice and rarest parts."—Shakspere.

A trainer having the following qualifications is a desirable one,—robust, health, known integrity, cheerful, hopeful disposition, and a superabundance of animal magnetism to drive into his pupil.

"He knew what's what and that's as high
As metaphysic wit can fly.—Butler's Hudibras.

The trainer has almost a motherly influence over his student, and many riders who cannot win a single event, are almost always successful when they place themselves in the hands of a competent trainer and have confidence in him and obey him. In short he is indispensable to the successful athlete. The trainer will for his care,—

"Find tongues in trees, books in the running brooks,
Sermons in stones and good in everything."—Shakspere.

and turns every circumstance to the best account for his charge. Generally speaking the trainer does not give his pupil rules to follow but simply acts or instructs at all times to suit the circumstances of occasions as they arise.

Competent trainers do not receive the compensation which they merit, nor are their efforts appreciated to the extent that they deserve by the average rider. This rebounds to the rider's own loss. Riders have been "dubbed" failures, yet when taken in hand by a good trainer they have astonished their rivals and proved themselves eminently successful.

In exceptional cases, the trainer has little control over his student, their temperaments being incompatible. In this case it would be like keeping a dog and a cat in the same cage. Unless the trainer and athlete work in unison the results will not be satisfactory to either the mentor or the pupil.

WEIGHT.

The majority of riders training for racing reduce their weight too much. True, every cycler going

into active training will lose considerable fat, however, his muscles will increase in size and weight, not sufficient, perhaps, to restore the loss.

Light, thin and wiry men should try to keep all the weight they have. Loose, fleshy men require to be reduced considerably.

In the normal state the body has fuel stored up for a rainy day, so to say, in the form of fat, and when occasion demands, the individual can go without a meal or two without injury. In the racing man in good "fit" there is very little fat stored up, hence, the care he must take, he must always feed generously, and should he lose appetite from any cause, he must rest or better remain in bed until recovered or he will become "stale" and it may take weeks to get in good fit again.

WHEEL.

"Then wheeling down the steep of heaven he flies."—Pope.

"A good workman always has a good tool." The individual who will not pay the price and get a high price wheel had better go to an insurance agent and take out a policy on his life for as large an amount as he can afford to pay for. The best men invariably secure the best grade wheels irrespective of cost. The rider should give his wheel as much care as his watch, and whenever it is injured or out of true, he should see that it is in proper hands for repair. Many men profess to do this sort of work, who really know nothing about it, and they may injure a valuable wheel rather than repair it. The lighter the racing wheel is the better, consistent with rigidity. The slightest swerving causes friction and retards speed. There are no two men exactly alike, therefore, every rider must select and adjust his wheel to suit his own idiosyncrasies; generally speaking, men having short heels and muscles in front of thigh and calf of leg well developed and lift their feet high when walking may use a 6¼ or 6½ inch crank, whilst light, active, lithe men with

long, ribbon shaped muscles and heel projecting will do better with a 6 inch crank. They are fast pedalers. If the rider depends mainly on the downward thrust, he places the saddle well forward and uses toe-clips. If he pins his faith on push and pull he may place saddle further back and use shoes having slots. A light steel band or stirrup across top of foot from pin or end piece is an excellent contrivance, but in case of a fall it would probably prove to be very dangerous. This will be remedied at no distant day.

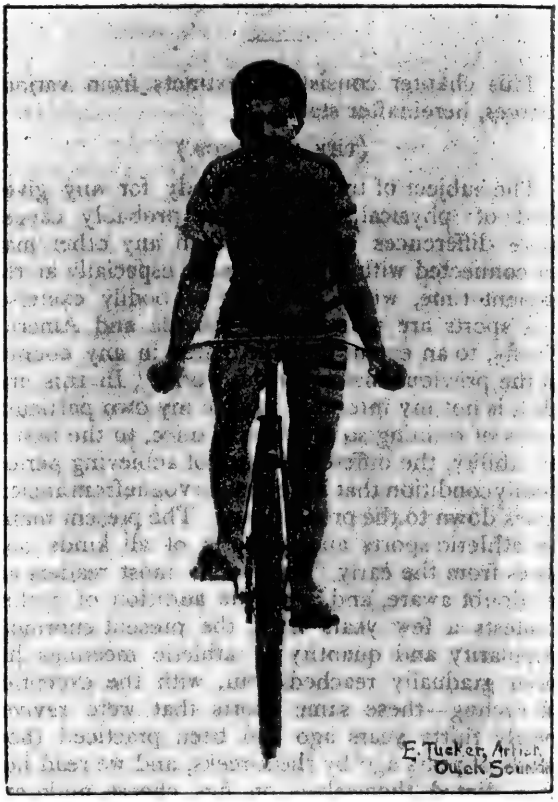
PHYSICAL CULTURE.

This chapter consists of extracts from various sources, hereinafter stated.

(THE BEARINGS.)

The subject of training the body for any given kind of physical exercise has probably caused more differences of opinion than any other matter connected with athletics, more especially at the present time, when all kinds of bodily exercises and sports are practised, in Canada and America chiefly, to an extent unprecedented in any country in the previous history of the world. In this article it is not my intention to give my own particular views of training so much as to trace, to the best of my ability, the different modes of achieving perfect bodily condition that have been in vogue from ancient times down to the present day. The present mania for athletic sports and contests of all kinds only dates from the early "sixties," as most readers are no doubt aware, and, with the addition of cycling contests a few years later, the present enormous popularity and quantity of athletic meetings has been gradually reached—but, with the exception of cycling—these same sports that were revived nearly thirty years ago had been practiced thousands of years ago by the Greeks, and we read how they dieted themselves on figs, cheese, milk, and such like food—not touching meat or strong drinks of any kind—and when taking their exercise would run about shouting at the top of their voices, presumably to improve their wind! Rubbing of the body was generally believed in, and we find "flesh-

scrapers" offered as prizes. They were also in the habit of besmearing their bodies from head to foot with unguents—but this was probably to avoid their opponent's clutches when wrestling, and not with any idea of conducing to their bodily strength.



E. BRUCE MILLER, OWEN SOUND.

CANADIAN CENTURION CHAMPION.

Total No. 13—1893.

Milo of Crotona, the first athlete that ever lived, who won six Olympic contests, thus being the 'champion' for twenty-four years, trained, or is said to have trained himself on a system of his own. He would start with a young calf, carrying it across his shoulders further and further every day, and the animal imperceptibly growing, he gradually worked up his strength till he was carrying with ease a full sized cow a long distance each day, and this man was training for contests in wrestling, boxing, throwing the javelin, running, and putting the weight or disc! Again, the training that Ladas, the Spartan runner, underwent for the running at the Olympic games, could not have been very perfect, for he won the race, but died at the goal, or "on the tape" as we should now say. Of course, as has often been pointed out, we have no means of getting at the relative merits of these ancient athletes compared to those of the present day, since there were no means of recording the time, and in the broad jump the only thing that we can compare, according to the translators, we are asked to believe that fifty feet was quite an ordinary performance. The Greeks jumped with the use of dumb-bells which they threw away behind them either at the moment of taking-off or in mid-air, but Howard, of Bradford, the finest modern exponent of jumping with dumb-bells, could only clear twenty-nine feet odd in the year 1854. However this may be, we will leave the Greeks and their games and come to more modern times, but even now, to deal thoroughly with the subject, we are a long way off cycle-training yet. Of course, many athletes of various countries flourished from the time of the Greeks down to the commencement of the present century. But little or nothing is known of their ways of training, and we can now slip right down to the commencement of the present century, when once again man began to pay attention to training his body for physical exertion in the person of the prize-fighter. To

this class of athlete the rudiments of all systems of training in use at the present time may be traced. The early rising, the dip in the sea before breakfast, the heavy morning's sweat, the great quantities of fresh meat and vegetables, the afternoon sparring, moderate drinking, and early to bed, these are the rough outlines of training in the old days, not forgetting heavy purgings with salts, etc., "to cleanse the system and carry off all impurities." The amount of work these men did was immense, but they probably ate far too much meat, and had to take doses of physic to carry it off; still the rounds of the ring prove that some of them at least must have benefitted by it, or they could never have taken the amount of punishment they did, or shown such endurance, but I think we may take it that the course of training undergone by the prize-fighters at the beginning of this century was altogether too severe, as the early deaths from lung disease, etc., prove.

One man stands out prominently as a great trainer in those days—Captain Barclay, the famous amateur pedestrian, who walked 1,000 miles in 1,000 hours on Newmarket Heath, about 1805. He not only trained himself for (at that time) great achievement, but he undertook the most responsible task of training the famous Tom Cribb for both his fights with the negro Molyneux for the championship of England—and this he did successfully, taking Cribb to his place in Scotland and there training him after his own fashion—which was chiefly making the obese Cribb keep up with him on long walks and at ploughing—which the Captain considered one of the very best exercises. Still in those days, as now, probably the greatest training maxim of all was, to a great extent, forgotten, viz.: "What is one man's meat, is another man's poison." What suits one man either in the way of work or food does not necessarily suit another. Yet to put a man in training in the early part of this century meant making him eat, drink,

and do the same amount of exercise as others did, regardless of difference in constitutions and other trifling matters, and what may be called the "raw meat and unlimited exercise theory," held good right down to the time that amateur athletics began to be instituted about 1864, when men's reason began to tell them that to purge youths of eighteen or twenty with doses of salts and then sweat them down with unlimited work, in the same manner that they would a prize-fighter or sculler, who had been "on the drink" for months—must be absurd —to say nothing of the raw beef, and the heavy old ale and port. All this sort of thing is now luckily exploded; but in the early days of cycling it was still considered to be the proper thing to do when in training, and even to this day I believe that the most extraordinary ideas as to how men train could be got from the uninitiated. Suffice it to say now that experience and science have reduced training as applied to cycle racing to a fine art. A happy medium without any great extremes in any way, whether it is for the short distance sprinter or the long distance rider on the road, has been arrived at.

Unquestionably more harm is done and many men permanently injure themselves by doing too much work, and far more men in any season are over-trained than under-trained, but this is not going into details and explaining cycle training as it is carried out to-day. We will first take the sprinter and see how an ideal course of training should be carried out, Always remembering that no rules suit any one man, and that each man must "know himself" better than anyone else. Take an ordinary strong man of good digestion and perfectly sound. He would live close to the sea, in a place that suits him, and near a good track. He would retire to bed at 10, and rise by 6. Rubbing himself well on rising, and perhaps a little dumb-bell exercise; then on with flannels and a plunge in the

sea for a few minutes, not exceeding five, having previously swallowed a mouthful of bread and butter, and say a small glass of really sound port-wine; a brisk walk, and then a hot breakfast, consisting of eggs, fish, cocoa, or whatever he is accustomed to, then a good hour's rest and a stroll down to the track, where he practices sprinting till he fells that he has done enough, without tiring himself—dinner of hot joint—vegetable and light ale—milk, pudding or custard. Rest again, then in the cool of the evening, some more practising on the path, always leaving off fresh, and rubbing well afterwards. Supper at about 7 of anything wholesome. No smoking at all, as it is undoubtedly injurious. This sort of life with plenty of lounging in the open air when not riding would constitute a fair specimen of the life of a man training for path work. The regimen to be pursued by a road rider would be virtually the same as regards diet and hours, only the practising would be a much more tedious affair, plenty of long rides without unduly reducing the rider's weight, as well as long walks to improve the stamina, would be necessary. Training, after all, is simply getting the body into the highest state of health possible; and the same means must hold good, whether success at cycling, running, rowing, or any other kind of athletic sport is aimed at; the only difference being in the kind of exercise taken; as, for instance, no one would think of training on foot for a cycle race, or *vice versa*.

As to the old query if training is harmless, how can bringing a healthy man into the highest attainable state of health and strength be detrimental in any way? Of course, he must be perfectly healthy and strong in every way, or he could not stand the work; but given that, I don't see how it can hurt, provided he trains in a rational manner, and studies himself, and does nothing that he feels is against nature—that is the great thing. Every man of ordinary common sense should be able to train himself

far better than any other man could train him ; for he knows how he feels after a ride, and what is too much for his power, and what is within them, much better than any professional could tell by looking at him or asking him questions.

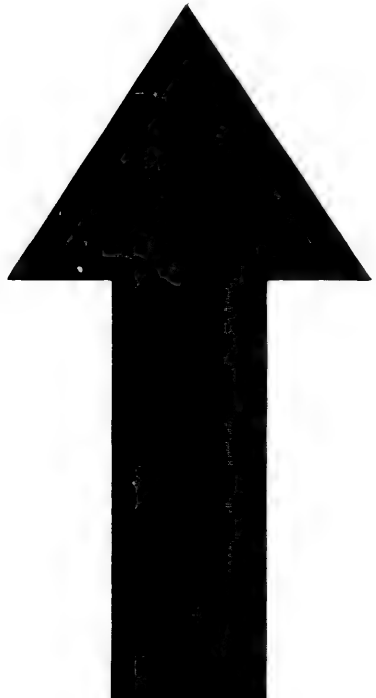
R. J. MECREDY.

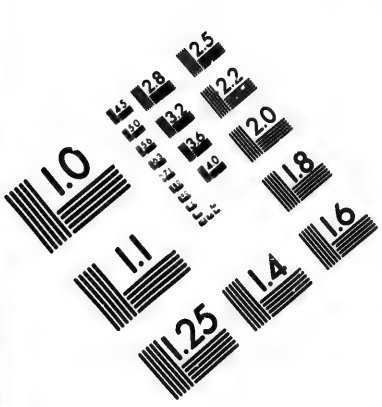
(THE WHEEL, 1890.)

At the end of last season the Irishman determined to give up racing, and go in for "enjoyable cycling." Unlike many another man who has so resolved at the end of a season, however, he kept his resolution at the commencement of this present year, and it was not until the College races in June that he was tempted to enter for any competition, and even then he only did so because the events were all confined to the University Club, and were on grass, so that a defeat would not be a disgrace even to an ex-champion. To his surprise he found that, with only two preliminary spins (on a roadster and in road costume) round the grass track, and one or two long slogs of ten miles each on Ball's bridge path, he was as fast as, or faster than ever ; and only then he started regular practising on the path.

During the winter and spring he had maintained his usual habit of cycling into town and home again every day, only going in by train on three or four occasions when rain was descending heavily. A slight shower would not deter him. Living, as he does, five miles away from Dublin, his daily ten miles minimum of riding kept him in robust health and, moreover, his residence is at a considerably higher elevation than the city, so that he had the advantage of an easy ride nearly all uphill in the evening, thus the early morning ride did not tire him at all. Once in his office he seldom left it during the day, but had his lunch brought into his room, and only went out to make short calls in the







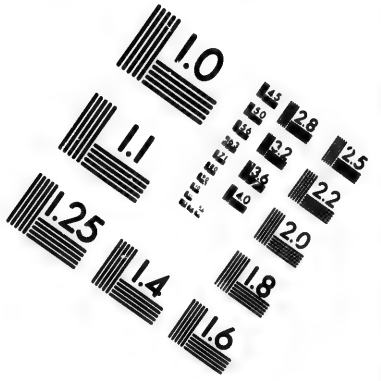
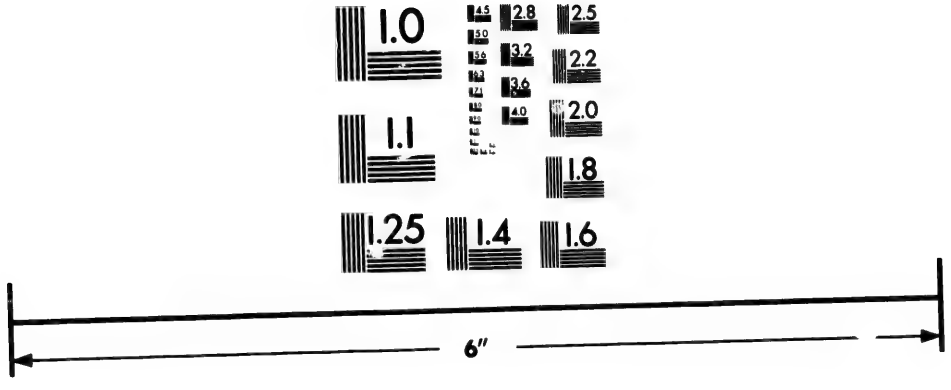
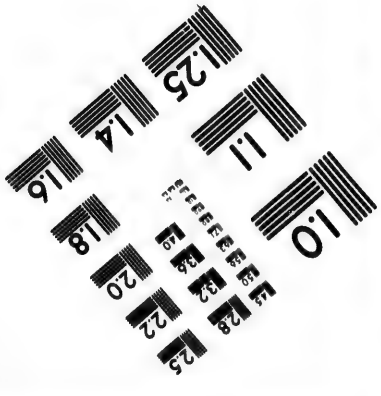


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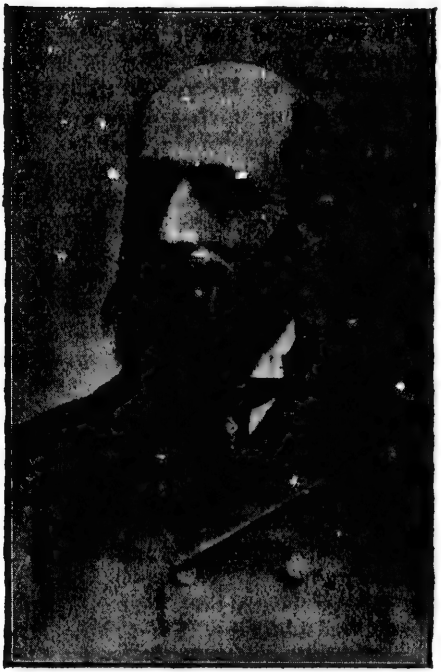
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city occasionally. On a fine day, however, he would ride home by a longer route; and on every Saturday he went on club runs with the Ohne Hast Cycling Club, riding indifferently a tandem tricycle with a lady on the front seat, and a single safety. In the latter case, he would always be in the front rank of the tow-rank brigade, and the hard work doubtless aided in building up that firm muscle, which subsequently, when dry roads brought easier riding, transformed his limbs into lissom members with unusual staying powers.

Thus far, his habits were not contrary to accepted tenets of training, although some path sprinters do say that winter riding "slows a man." Where the unusual feature came in was when he recommenced actual path practice. After his victories on grass, at the College races and the D. U. B. C. meeting on grass, he did not relinquish his road riding, but down to the present date he keeps up his regular habit of cycling into and out of town daily rides his roadster to the path when going to train, and even ride to the city, and thence to the path, when about to race, thus running quite contrary to the regulation path man's habit of never cycling, except on the path during training or before a race. Only when he went to London for his holiday did he relinquish his invariable rides over the street, and there can be no question that in this respect the Pneumatic tyre helped him greatly, the absence of vibration over the rough granite streets of Dublin making all the difference between such street rides being harmful and beneficial to his path form.

Mecredy does not keep a cycling diary, but from my own observation I doubt whether he has missed riding on a dozen days this year, half that number being when he was at the Stanley Show without a machine. The results are confirmatory of my own long-standing opinion as to the advantage of regular and persistent cycling, my own experiences of being out on the wheel 365 days in the year (when



R. H. McBRIDE, TORONTO, ONT.

FIRST PRESIDENT C. W. A., 1883.

Mr. McBride and Mr. Harry Goulding, the pioneer cyclist of Canada, founded the Toronto Bicycle Club, 1881, and he was the first president after its incorporation in 1891. He has toured on the good old ordinary cycle through most of Canada, Scotland, England, France, Switzerland, and Germany, and has ridden over 117 miles over rough roads in a day on this type of cycle.

Mr. McBride is still very fond of wheeling and believes it to be the finest exercise in the world.

I was a young man) being that I enjoyed such health as I never had either before or since that Spartan *regime*.

The dietetic side of Mecredy's training is such as (again) few racing men will follow. Like all Irishmen, he likes a cup of tea, and his usual diet consists of tea, a little eggs and bacon, toast, bread and butter, for breakfast; luncheon of plain meat fowl (of which latter he is very fond,) and either some light pudding or jam; a cup of tea and morsel of cake at four o'clock, and a meat tea with plenty of sweets upon reaching home about 6 p. m. Nothing afterwards, and seldom any beer. In the winter he smokes a pipe now and then; but the habit does not dominate him, and he easily "knocks it off" when actually training for a race.

As is necessary for riding on the mountainous roads near Dublin, he sits rather vertically over his cranks, and puts his saddle rather high; but unlike the regulation scorcher, he loves to coast downhill with his feet on the footrests, and does not spurt on the road at all.

J. W. STOCKS.

(AMERICAN WHEELMAN.)

"Whilst training I rise every morning at 7.30, and take an egg beaten up in a glass of port, after which I go for half an hour's walk before breakfast, which consists principally of porridge.

"After breakfast I read for half an hour, and then go for a sharp spin at three quarter speed over the track for fifteen minutes, after which I have a cold shower bath while still hot, and a rub down with a coarse towel, besides a little massage treatment from an attendant.

"For lunch I have an underdone beefsteak, a little bread, and some rice pudding or stewed fruit —never any pastry. I invariably have an hour's sleep after lunch, and then take a stroll in the park

till tea time. This meal usually consists of tea, bread and butter, and cold tongue, and is always taken at five o'clock.

"After tea, an hour's rest, another spin on the track, and a rub down, followed by a light dinner as soon as possible, complete the day's work, and I am invariably in bed before eleven.

"On the day of the race I had to wait until sunset, owing to the high wind. I started off at seven sharp, attended by fifteen pace-makers.

"The worst part was the first seven miles after which I worked hard, only heeding the rapid cry of the timekeeper as I flew past him, three-fifths of a second late on my twelfth mile.

"No, I never get excited; though, of course, the strain is simply terrific while it lasts, and the moment the race is over I am covered with towels, which absorb the perspiration, and my knees are anointed with a special preparation.

"Yes, it is indeed a fearful speed—2 minutes 23 seconds for every mile, and the actual performance was 25 miles 360 yards in 59½ minutes."

Mr. Stocks has accomplished 25 miles 690 yards within the hour.

J. S. JOHNSON.

(IRISH CYCLIST.)

My method of training is one which I can recommend to every racing man. I advise a trip to Hot Springs in early spring, and remain there for six weeks or so. It does a fellow a lot of good. This last season I spent six weeks there. Then I went to Savannah, where there is an excellent quarter mile cement track. My preliminary work consists of five miles in the morning and five miles in the afternoon at a 4 minute gait. This I continue for a week. The next week I do ten miles in the morning at a 4 minute clip, and five miles in the afternoon at a 3 minute to 3.10 gait. The

week following I do a quarter mile in 34 to 40 seconds, say four times a week. After that I cut down the long work, doing five miles in the morning, and in the afternoon sprint 200 yards four times a week and ride a fast quarter in 33 seconds. Then I consider myself ready for a "fast repeat." By that I mean I ride a mile against time in 2ms. 28c., and after half an hour's rest go on the track again and ride a mile in 2ms. 27s. Three days later I repeat again, riding a mile in 2ms. 24s., and ride another in 2m. 20s. The mile and repeat work I continue twice a week until the season opens. My plan is on the same system that a trainer pursues when handling a fast trotter. In the meantime I sandwich in 200 yard sprints. I do not drink, smoke or chew. When in training I always retire at 9.30 at night. I believe in getting a good rest. I consider a good rest one of the principal things in training. If a man does not rest he loses flesh. He worries, and is generally unfit for trials where endurance and speed are called for. I also believe in good eating, and am very careful in what I eat.

My favourite dishes, and those that I recommend to all athletes, are beefsteak, mutton chops, chicken, lots of vegetables and light pudding. Oatmeal I always take at breakfast because of its strengthening and invigorating qualities. Cucumbers and "sich" are barred.

L. S. MEINTJES,

(IRISH CYCLIST.)

To be successful you must train and train well. It is of no use to train for a short time, as some do, and then stop. You must train till perfect, and it must be done regularly. In training regularity is everything. That is a good point about the American cyclists. They train and do it well. If America put her best men in the field against the riders of every nation, the other riders would not

be one, two, three, four, five. I have ridden with the best in America and England, therefore, I think, I am fully qualified to make that statement. My system of training is nearly the same as Zimmerman's. In spring I begin to prepare for the racing season. My preliminary work consists of a ten mile spin on the track about 10 o'clock a. m. I ride at a slow, but steady pace, and, after I have finished, I get a good rub-down and rest quietly for a couple of hours, when I enjoy a two mile walk at an ordinary gait. Coming back to my training quarters, I again mount my machine and reel off about twenty miles, going free and easy. This sort of exercise I continue for about a month, until I find my muscles are working free, and that the stiffness which appears when I began has entirely disappeared. Walking, I think, makes the muscles active and makes the wind good. Having followed the schedule mentioned above for a period of one month, I then begin to sprint. I ride about five miles in the morning and ten in the afternoon. The early part of my ride is confined to slow pace, which I gradually increase and finish with a sprint at top speed. This work I continue for another month, when I begin to sprint quarters and halves. Having satisfied myself that I am thoroughly fit, that my wind is good and I am able to wind up with a strong spring, I start out for the race meets. After that the work you get in your race will be quite enough to keep you on edge, provided you diet yourself. I eat everything and anything I like except pastry. I never use liquors, but am an inveterate smoker. In training a man should be careful to wear a sweater. It helps to reduce the superfluous flesh and absorbs the perspiration. Draughts should also be avoided. A slight cold is liable to put a man out of training for an entire season. In a race a rider should never over-exert himself. As soon as he feels that he is not doing well he should stop riding and not pun-

ish himself. Over exertion is apt to result in permanent injury to one of the organs, and cripple a man for life. Only when a man is thoroughly well should he ride himself out.

W. C. SANGER.

(IRISH CYCLIST.)

I commence to prepare for the racing season by training with the dumb-bells and Indian clubs early in the spring to harden the muscles and develop the lungs. I take long rides every morning, say 20 or 30 miles, for a month or two on the road, then I go on the track and work there about five miles in the morning and afternoon. As soon as I feel good and strong, muscles supple, lungs good I begin to do fast work, keeping on until I develop a sprint, usually in the last half-mile. The early, long rides have strengthened my staying qualities, and the short rides enable me to do good work in short races. I try and sprint a mile in about 2min. 15sec. If I can do it in the time I know I am in good fettle, and enter a race meet. I always receive a good rub-down on leaving the track. The rub-down, by the way, is one of the principal things in training. In my opinion a rider knows better than his trainer what he can do. If a man feels well he should work well. Of course, if a man is in condition, but is lazy, then the case is different. He, in such a case, should be made work. In regard to what a rider should eat, I leave that to the man himself. I eat what I please, only barring greasy dishes. Roast beef, I think, helps a man and it does one good if eaten before a race. I don't believe there is any harm in drinking a little beer once in a while. Speaking of myself, I have not drank anything in a year.

F. J. OSMOND.

(NEW YORK WHEEL)

Naturally everyone is curious to ascertain how one of the best riders, in the world prepares himself to meet his engagements. Like most men who have studied the subject, he considers no two men should train exactly alike ; as are the faces of men different, so are the methods by which man is brought to that perfection in bodily health known amongst racing men as being "fit." Thought there is one broad system to go upon, the details differently employed by every rider. Osmond at first rides twice a day, mostly going five or six fast miles For those who know anything about training will tell you that such work would kill most men, but he has the physique to stand a great deal of real hard work. After his first few weeks' preliminary training, he varies his work by practicing speed or sprinting. In private at Herne Hill this season he has beaten the best quarter-mile time, so that it will be seen he has not neglected cultivating his "speed qualities." I have spoken to many men during the last few years on the subject of training, and I find that all our modern champions have discarded the old system of dieting. Osmond is no exception to the rule. There is nothing particularly striking in his method of "getting fit." He is a man who can stand a lot of hard work, and he does it.

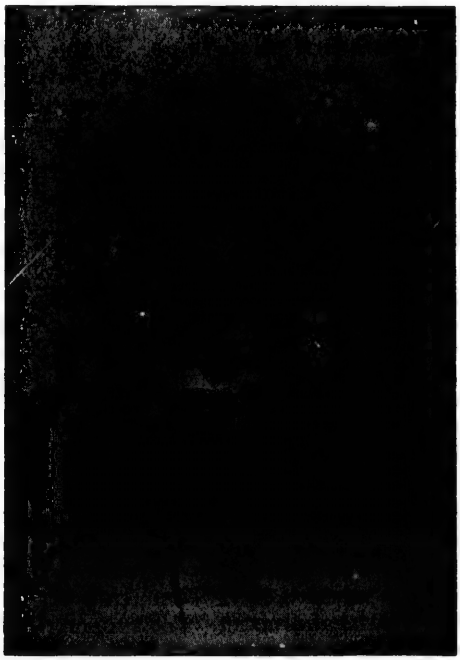
No subject has caused more controversy than the correct position to sit upon a safety cycle. Mecredy last year was a believer in sitting much more over his work than had been the habit of our English "cracks;" Osmond favors the English position, and his Whitworth machine is built with the peak of the saddle frem 8 to 9 inches behind the centre of the crank bracket. You must get behind your work to pedal correctly, he argues ; it enables you to drop your heel more and claw back ; in a word, your ankles are of much more use to you. He is not yet

a convert to sitting between the two wheels of the safety. He sits forward an inch or two only over the center of the back wheel. There are many good riders who may think eight or nine inches behind the crank bracket is a way back, and so it would be for a rider of small stature; but it must be remembered that Osmond is very tall, so that it will not do for small men to adopt his position.

Osmond's method of sitting upon his machine naturally bring us to the question as to the length of wheel base. Now, if he sits an inch over the centre of the front wheel, with the crank axle nine inches forward from the peak of the saddle, it is not necessary to say that the "Whitworth" he rides has a long wheel base. He pins his faith in the lengthy safety, which, he says, on the path, is faster, also better for the negotiating of corners. The position of the front wheel of his safety is such that his feet, when on the pedals, clear, whichever way the wheel is turned. From the above it can be gleaned that the tall rider requires a machine with a longer wheel base than the small rider. Osmond holds this opinion.

The safety upon which Osmond rode was geared to 68 inches. He is a convert in favor of a high gear, but to get the best results from it practice is required. High gears want a deal of training for, but after you gain the necessary amount of physical strength to push them, he thinks men can ride faster. It must be remembered, however, that Osmond speaks only of the path, and the fastest of paths, so that provincial racing cyclists who ride on all classes of tracks should read between the lines. Then, again, what suits Osmond may not afford the best results to other riders, for he admits himself that he is suited by hard plugging, and thinks that if tricycle racing were more popular than it is he would demonstrate that the three-wheeler was the machine which he could shine on more than any other cycle.

A subject which has not received the attention from riders which it deserves is length of crank. So thinks Osmond. His idea is that a tall man, even on a safety, has an advantage over a small rider, because he can use a longer crank, and thus obtain more power. If a man be possessed of short legs he cannot use long cranks; the tall rider can. A longer throw naturally obtains more power, consequently a higher gear can be propelled.



JOHN C. MONTEITH,

MAYOR, CITY OF STRATFORD, ONT.,

HON. PRESIDENT, STRATFORD BICYCLE CLUB.

W. W. WINDLE, (WORLD'S RECORD HOLDER.)

(DAILY MAIL.)

"To get the best results in bicycle racing, or in any sport or profession, strict attention should be paid to every detail. To achieve success in racing a man must be well trained and in good condition. A few riders can dissipate more or less and ride well, but in the end they generally have their constitutions undermined. Training should not be looked upon as a drudgery but as a pleasure. My training experience has been one of the most enjoyable of my life. You should be in perfect health when you race, feeling when you are on the scratch that there is nothing to hinder you from winning. One should study the effect of the food he eats; the effect of riding at different times and distances, and the effect of riding his wheel, as he may have it altered, then when he gets it all right in his own mind, stick to it. Easy pedaling and position, are attributes of success and should be cultivated. You very seldom see an awkward pedaler, or one who rides in poor form, that is successful.

"In regard to food, dieting, etc., I believe in rising at about 7 o'clock in the morning and taking a short walk or some light exercise before breakfast, the latter to consist of rolled oats, eggs in any plain style, broiled steak and weak tea. Don't ride until about 11 o'clock, or until your food is thoroughly digested. Take dinner after you are over the effects of riding. This should be of plain soup, roast meats, plain dessert, etc. Then ride again about 4 o'clock in the afternoon. For supper partake of light, plain food, but no meat. In the morning ride from two to ten miles easily, varying the speed and distance according to your feeling and the weather. In the afternoon try shorter distances, say quarter of a mile spurts two or three times a week, and when you get a fine day and feel all right have a good fast ride against the watch, but not over once

a week. I always get the time whether slow or fast, as it breaks the monotony.

"Everyone should use their judgment regarding the distance they ride and the food they eat. One thing may be good for one and not for another. Don't believe what the professional trainer tells you regarding riding. Very few of them know how to carry a wheel, much more adjust it thoroughly, and in my opinion are not capable of telling you how long and how fast to ride. Don't ride indifferently. Go a distance and then come immediately in. Roll yourself in a blanket until you sweat freely, and then have some one rub you dry, gently, with a towel. After you are thoroughly dry you may have your attendant to rub on some liniment. I sometimes do this, using arnica and witch hazel in equal quantities. I am not opposed to anyone rubbing you hard. There is no necessity of running, walking hard, or taking any violent execise outside of your riding, as it only tends to bind up your muscles; the muscles should be soft when in good form. Road riding has the same tendency to bind up the muscles.

"The proper weight for a racing wheel varies from 25 to 27 pounds. Whatever you get be satisfied that you have no cause to lay defeat to it. Fit it to yourself thoroughly. Narrow the handle bars so you can get all your strength utilised. My bars measure 24 inches from handle to handle. Narrow across the sprocket and six-inch cranks are my standard. The proper position for your seat can be determined by moving the seat back from the axle centre and riding in different positions. I believe in riding more over the centre than the majority, the peak of my saddle being about three inches from the axle centre. I have tried it always, but it seemed to me to be more sensible to push directly down than in front of you, and I could ride without wasting any strength."

A. A. ZIMMERMAN, (WORLD'S CHAMPION.)

(DAILY MAIL.)

In early spring I begin to ride on the road with a road wheel, doing from ten to thirty miles a day. I take it easy, and do not attempt to do any fast work whatever at this time. I continue this for about three weeks, or until I find that my muscles are working all right, and all the feeling of stiffness which always come to me when I first begin to train has entirely left me. Then I take a racing wheel and begin working on a track. During my trip to England I generally worked on the Herne Hill, and usually did about ten miles in the forenoon, and the same in the afternoon. Sometimes I worked five miles after supper, but this was the exception. I work at about a three minute gait for several days after taking up track work. When I find I am going all right I try to spurt a hundred yards or so, and keep on increasing the distance each day until it reaches a quarter of a mile. After each ride I am rubbed thoroughly dry with towels; then my whole body undergoes a sort of massage treatment from the bare hands of an attendant, and then some liniment is plentifully applied and rubbed in. I consider rubbing with the bare hands by a strong, healthy person one of the most valuable adjuncts to good training.

Regularity in work is a very important element in making a success in training. The morning exercises should be taken from one and a half to two hours after breakfast. I do not believe in taking any exercise before breakfast. If exercise can be taken in the afternoon it should be about two hours after the dinner hour. To ride immediately or soon after a hearty meal, whether it is breakfast, dinner, or supper, is of no value to a person training. I have followed no particular line of dieting. I do not eat potatoes except in very limited quantities, neither do I drink coffee, but nearly all other table

luxuries I indulge in and enjoy. I drink tea in preference to all other beverages.

Some men have the power to stay long distances at a moderate pace but cannot spurt at all, while others can do just the opposite. A very few can do both. Frank Shorland is a wonderful example of a man who can both stay and spurt. I have not met another man in whom both these qualities were so well developed.

If you have found out the distance you can ride best, try that distance about once a week, and have some one to hold a watch on you and clock each quarter of a mile. At each attempt try to improve each quarter a little, but hold enough power in reserve to do the last quarter faster than any of the others. If one has trained for short distances, say five miles and under, it is certainly very hurtful to try very much longer distances. In England I had trained for the short distances, and without any proper preparatory work entered and rode in the fifty mile championship. During the latter part of that race my legs began to feel numb, and while they kept at work, yet the life seemed all gone out of them, and for several miles before the end of that race I thought they would not last the race out. They did not reach a normal condition for about three weeks after this effort.

Taking a little exercise to keep from getting entirely out of practice is very often called training. That is not my experience, however. I am often asked if I had a pleasant time during my English trip. I always answer "yes," because there were a great many pleasant things connected with it, and I met a number of very agreeable people who tried to assist me in every way. But I don't think most people would have called it a pleasure excursion to be obliged for five months to follow a strict routine, each day exactly like the other. It got to be very monotonous, and at times I felt like quitting. I keep a record of the miles I ride while in training,

and I find that I had ridden over twelve hundred miles this year before I was able to win a race. I know that I am one of the hard men to get "fit," but I have very little trouble after I once reach perfect condition.

I have met nearly all of the prominent racing men of Germany, England, Ireland, and Wales, besides those of America, and I do not think there is any branch of sport that contains more men with good education, with brains, and more thorough gentlemen than cycling.

RALPH TEMPLE.

(THE WHEEL.)

A man cannot race on the path and ride on the road at the same time. Road work stiffens the muscles and prevents the attainment of a high-speed rate. Hill-climbing is also very bad practice for path racing. In fact the path racer must put in all his work on the path.

The object to be gained by path practice is the development of a well-sustained fast spurt, as the man who has command of the best spurt will almost always win on the homestretch. A man should never leave the path tired. He should never strain himself or ride in bad form. It is not necessary to lean over the handles to get the most speed out of the wheel and the rider. Temple sits up all the way.

The rider, in his daily afternoon practice, should ride two or three miles at a good pace, and finish off with some practice at spurting. He should spurt 100 yards at first, and gradually increase the length of the spurt until he has reached a point when he can ride at top speed 200 or 300 yards or more. Do not try often against the watch. It is a wrong idea that the more work one does the stronger one gets. As a fact, every trial takes something out of a man, and the racing man should never attempt to ride himself out except in a race.

The most important thing for a man to learn is his own system, and the effect of exercise and food on it. After each day's exercise, dry the body thoroughly with a towel and then rub the muscles with the hands, to make them pliable. The final touch is a rub down with whiskey. Cold bath, or much of the shower path, weakens the system and slows the muscles. A sponge bath is quite sufficient.

In dieting, stick to simple foods and tea or ale as a drink. In the selection of machines, the position of the saddle, etc., one must study the thing out and decide for one's self.

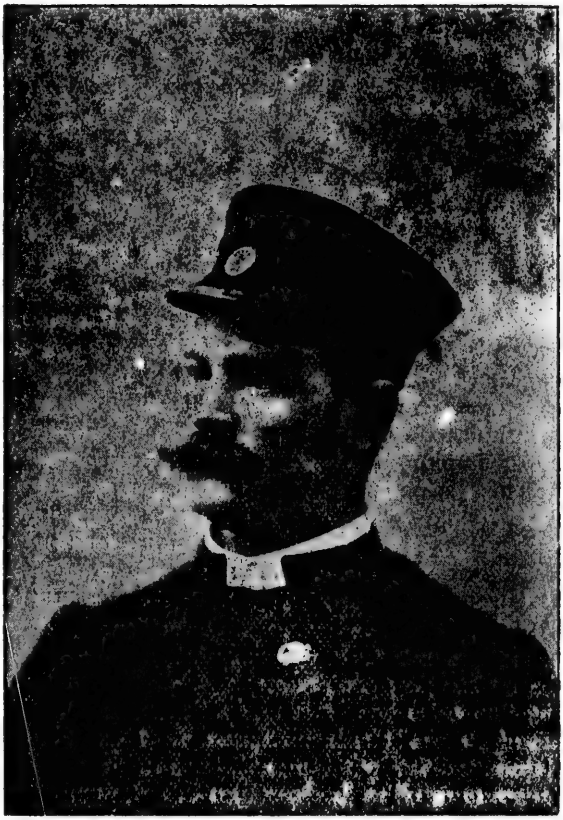
GEORGE HENDEE.

(THE WHEEL.)

Cycling has opened up a new branch of athletics which is becoming more and more popular each year, and the questions are often asked, "Who is the champion, and what is the record?" That "record" which has steadily been battled with from the early days of cycling until the present time, is a marvelous piece of human endurance and pluck. Each year some one from out the host of cyclers has been fleeter of foot than his predecessors and has hammered the record lower and lower, until now the rate of speed attained seems almost incredible.

This has not been achieved all at once, however, but has been reached, not only by the manufacturers building lighter and better wheels, and the construction of tracks, but by study and careful training on the part of the riders themselves.

Whenever a great feat has been accomplished, not only in cycling but in all athletic sports, "condition" was the starting point. Little does one think while watching a race, of the many weary hours that have been spent, and the self-denial gone through to bring the man into the perfect shape in which we see him.



L. L. LEWIS, Toronto, Ont.,

UNDER GRADUATE TORONTO UNIVERSITY.

L. L. LEWIS, whose genial face is given on the page opposite, began life as a pedagogue. He was for some years principal of the Public Schools in the town of Blenheim, during which time he did much to foster bicycling in South Western Ontario. He is an undergraduate of three years' standing Toronto University in Honor Modern Languages, and a living exponent of what cycling can do for the health. In his present capacity as city traveller for the Goold Bicycle Co. of Brantford, his success is phenomenal, as at present date, January 1st, his sales for 1894 amount to nearly thirty thousand dollars. His courtesy and fair dealing have gained for him many friends among bicyclists.

Training for cycle racing has most certainly opened a new branch of the art, and although no two men can be trained alike, still there are many fundamental rules which can be followed with the best of results.

One of the leading points to be considered is the distance to be raced. Many athletes claim to be good at any and all distances, and, to a certain extent, this is true; but at some point they excel; so in entering upon a course of training lay out your work, and leave no stone unturned to get yourself in the best condition possible.

We train to bring ourselves into that condition from which we can obtain the greatest amount of speed from the least exertion.

To gain that end all unnecessary flesh must be removed and the muscles left to act freely and easily. The flesh can be removed in many different ways; most common of which are the shower-bath and the use of a "sweater."

Some persons cannot stand the rigor of the former, and many find the "sweater" a very uncomfortable thing to wear.

Therefore some experimental work must be done.

The "sweater" is most generally used, however. The reducing of the flesh should be conducted slowly, as there are chances of weakness following a too sudden falling away of superfluous flesh. Your weight may not decrease, however, in pursuing a course of training, and strange as it may seem, some increase in weight. The flesh that is displaced is more than equalled by the muscle developed.

This does not apply except in rare cases, and many reduce themselves several pounds. The writer has found that one of the best ways to begin a course of training is by taking a good dose of physic and following it up, in the course of a day or two, with another. This gets your system into good working order for the hard work of actual training to follow.

There is one point that has been sadly overlooked thus far in the preparation for racing, and that is the development of the upper body. There is no reason why the arms should not be as well developed as the legs.

True, the legs are really the motive power, but the arms and chest impart their share of the power through the means of the handle-bar.

Many times the writer has been questioned regarding training for cycle racing, and when discussing the really small amount of work actually done in comparison with the tremendous preparation of the college student for foot races and other college sports, many have remarked that there was not enough work done. Certainly the cyclist undergoes an entirely different method, as far as exercise is concerned, from any other branch of athletics, the idea being not simply to obtain the greatest amount of strength and endurance, but to combine with these the elasticity and ease of action of the muscles in the quick pedaling necessary to rapid riding. The muscles have to be brought into that state which is at one moment hard as iron, and the next soft and pliable. This action has to take place

very rapidly when travelling at a high speed. For example, a man with short and knotty muscles, either above or below the knee, never makes a fast rider, simply because his muscles are not capable of the rapid relaxation necessary.

The art of spurting is a study in itself, and much might be written which would be of practical use to the beginner, but space forbids. A few points alone can be mentioned. The body should be held as still as possible, thus enabling the rider to hold his wheel steady. If this point could be practiced, many a bad spill could be avoided and a greater rate of speed attained. The daily routine of training ought to be such that no fatigue should be felt and you should feel at all times ambitious and confident that you are capable of doing a little more than you ever have done; ambitious to such an extent that when walking quietly along you feel like breaking into a run. This is the point to which training is supposed to bring one. From all facts gathered it is certainly ill-advised to take any other exercise than riding. For example, walking or running to any extent tends to make one "slow." Exercise in the shape of dumb-bells or Indian clubs is certainly a splendid thing before breakfast, but the track should be the main point of preparation. The spins should be taken regularly and vary according to the distance in view. For short distance riding, say from one to five miles, the spins should vary from one to three miles, with short sprints now and then. The full distance never should be run but once a week. This should be in the shape of a trail. Thus from week to week you can see the results of your training. It would be wise to keep a complete list of the miles run in practice. This might be valuable for future reference.

Practicing riding at full speed each time you mount will soon bring you into that condition called "stale." This is a point to be avoided by all

means. Once "stale," training might as well be given up for a month and you should confine yourself to road riding. Care and judgment should be used at each mount, considering at each time the weather, condition of the track, and rider. Should the wind be high it would be policy simply to confine yourself to spurting with the wind, thus becoming accustomed to quick pedaling. At each regular spin it would be well to finish strongly, each time increasing the length of the spurt until you have reached your limit. By the limit is meant the exact point from which you can hold your spurt to the very end. This you will find to be of great benefit, and it will give you confidence, when, without knowing, you might become hopeless of holding out to the finish.

Human endurance has a limit, but many and many a race has been won by the sheer grit and determination of the rider.

The daily routine of the athlete while in training must necessarily be about the same from day to day. His hours must be regular, not only in his exercise but in his hours of repose. Let us suppose, for instance, one is training for short distance work. He rises at six, has a dry rub-down, a short walk and is ready for breakfast, which might consist of soft boiled eggs, a couple of good wholesome mutton chops, and dry toast. After breakfast he is at his leisure until the hour of exercise, which may vary from ten until half-past.

He now has another rub-down and dons his practice suit. The spin consists this morning of three miles at a good swinging gait with a rapid finish, which starts the blood into good circulation. Now comes the hard and laborious rub-down.

This is accomplished with a rough towel, which is freely used until the flesh is brought to a rosy tint and all the pores are wide open.

Following this comes the manipulation of the muscles and the application of witch hazel, alcohol,

or other like substances, which prevents the muscles from becoming stiff.

When the rub-down is completed it is nearly dinner time. This meal may consist of a great variety of food, as the old idea of beef and mutton alone has long since been dropped. However, there is nothing better than good mutton, especially if the wind needs improving. In following a diet, mply drop all food that is fattening or that does not agree with you. The writer would suggest for dinner light soup, beef or mutton, very little vegetables and a small amount of pudding. A cup of weak tea for breakfast and supper would do no harm, but for dinner it should be dropped. The afternoon exercise should be confined to spurting different distances increasing to a run of two miles or so, if you are in need of more exercise. This is followed by a rub-down similar to that of the morning. The supper should consist of cold meats, dropped eggs, etc. The evening should be passed quietly, and the rider be in bed by ten or half-past.

Many rules might be written, but one of the best guidances is good common sense, and with a little judgment and experimental work, together with observances of all the regular rules of training, one ought to soon discover the best method to obtain the best results.

W. W. CARMAN,

CANADIAN CHAMPION.

Mr. Carman's time is almost all devoted to commercial pursuits, as he finds it more remunerative than racing, when he cannot give all his energies to training, therefore, his mode of preparation diverges somewhat from the orthodox.

He believes that for the purpose of acquiring speed, that track work is the best, and commences by doing three or four miles each, during the first eight or ten days at about a 3.20 pace per mile, un-

til he feels strong and can bear the pace easily, and finishes with a smart sprint. He increases the pace and distance in proportion as speed and stamina obtains. A week or so before a race meet he practices mostly short sprinting, always having a thorough rub and applying liniments after riding.

This practice method keeps him in good condition of health and "fit" for fast work.

He practices regular and temperate habits of life, going to bed early, eating regularly without overtaxing the digestive organs, thus keeping them always in good working order. He uses plain, nourishing and always well-cooked food, eschewing evil associations, stimulants, and late hours as tending to destroy the vitality of any athlete.

Most Canadian riders know that his cycling performances during his racing career, considering his opportunities for getting "fit" have equalled those of a world's champion cycler, and those who know him well consider that (in racing parlance,) a better piece of stuff, or a gamer man, never propelled a cycle than W. M. Carman.

We advise every reader who wishes to become well versed in the Science and Art of Cycling to read "Amateur Cycling," with hints on training by G. Lacy Hillier, and W. G. H. Bramson; published by Dean & Son, (ltd) 160A, Fleet street, E. C., London, England. American agent, F. P. Prial, 21 Park Row, New York.

CYCLING FOR LADIES.

In this last decade of the 19th century the interest manifested on all sides in the physical culture of women, materializing in gymnasiums, fencing classes, bowling clubs, riding schools, dress reform, etc., we do not hear as much as we ought to in favor of the cycle for her. Yet the steel horse does take position also in this grand contest for health and strength. This increasing agitation among women on the subject of physical development is a healthful sign of the times, for the establishment of the gymnasium—the "temple of health"—means, if generously supported, the departure of the drug store. Let us hail the coming and speed the parting guest.

It is no longer a novelty to see women riding on cycles on the streets of American cities, but we would like to see more of them in Stratford.

An external mechanical remedy inspires every thoughtful person with more confidence than a mysterious medicine with which, taken into the stomach unites with the acrid acid gastric juice, flows with it perhaps through the whole body, or perchance is wholly or partially expelled by the kidneys, intestines, saliva or skin.

It is quite otherwise with our mechanical remedies, and the mechanical cures which have come of late into such prominence, especially for all chronic diseases or weaknesses. These have, with reason, inspired the people with confidence. The cures of Oertel and Schwaninger (famous Germans), Terrain, Sanitariums, active, passive and resistant gymnastics, mechanical gymnastics, with steam as a partial impelling power, nerve vibration, massage,

the Ergostat (a wheel weighted according to the capacity of the patient, to be turned several hundred times daily, with the object of strengthening the muscles), turnen, cycling, etc., are general subjects of discussion. These mechanical remedies were based originally on purely practical observations.

Fifty years ago, Pleufer, and Henle, in advance of their time, recommended the slow ascent of a tower for invalids. They had in view solely the practical benefit of the expansion of the chest by deep breathing; and experience taught that tuberculosis, peculiar to narrow-chestedness, was prevented by it. But what was accomplished coincidently in the muscles, that there is the source of nutrition; how this nutrition was increased and diminished was not then known. That a person inhales nine thousand litres of air every 24 hours, what becomes of it, and the consequent nourishment, how much albumen is necessary for the system, and that it is furnished in bread as well as in meat. For all this important knowledge we are indebted to the pioneer researches of a Pettenkipfer and Voit, by which the first light was thrown on the workings and value of our mechanical cures.

Great value should be placed on all such influences as diminish fat and lessen the quantity of water in the body. Not only is it especially desirable to free the muscles of the heart from threatening fatness, since muscles burdened with such no longer do their work; but the de-fatening of the rest of the body is also of great importance. The blood of fleshy people, generally, is not as good as that of the slender, and with poor blood one is more easily fatigued, less capacitated for labor and much more susceptible to disease than one whose blood is rich; in such the composition of the blood with regard to proportionate mixture is not normal, there is an excess of water in it. A superfluit of water in the blood is easily discovered; this is the case when, by

the least effort, a person breaks out into a perspiration; such are less able to resist cold also. Sweating baths drain the tissues and give immediate strength.

Many think that old age has robbed them of their strength, whereas it is only an abnormal watery condition of the blood, to correct which, exercise sufficient to induce a free perspiration should be taken, and care exercised against a too sudden cooling off. As a good coachman cools his heated horses by slow driving, so, after profuse perspiration, exercise should be gradually relaxed, which is the best way also of toughening the system. As indicated, superfluity of water in the blood is coincident with impurity of blood, and poor blood with an excess of fat. Of course there ar fat people who are strong and healthy, but they are exceptions—cases where the flesh is unusually solid, of normal watery compositiou, not flabby nor bloated. The circulation of blood in fleshy people is not free, as a rule, especially in the lower extremities from which the return of blood to the heart is labored. Every organ in action demands 80 per cent. more blood than in repose, the laboring organs by fat deposits.

Again, the lungs of thin people as compared with fleshy, take in three times the quantity of air and blood, which in active exercise should be abundantly supplied them. Now, if all the organs are surrounded with fat, circulation is obstructed, breathing becomes labored and clogging, everywhere is the result, hemorrhoids, warix, etc.

The aim of all mechanical remedies is the same —the strengthening of the muscles of the heart, activity in the nutrition agents and defatening.

This is accomplished, as subsequently stated in chapter on training. If Guadaur, the famous oarsman, would train by the gradual, continuous process, in a suitable climate, we venture to predict that he will defeat the Australians, otherwise probably he will meet defeat.

Is cycling healthful, and what does it accomplish? First, we would assert that it is an excellent remedial agent, that it rests on correct principles, and by activity of body and mind, effects what no other cure is capable of; but that its province is only to reduce the weight of the body is an entirely erroneous idea. This is not its work at all. While efficacious as a curative agent of many conditions, it is not at all suited to sufferers from acute disease and heart palpitation: indeed, in such cases it may be very injurious. Persons with confirmed pulmonary complaints, easy succeptible to attacks of coughing, are not subjects for the cycle. True, it is possible that such a one may derive benefit by a slow and discrete use of it, but to keep up the same pace as his or her companions. They must breathe through the mouth, with most injurious effects from the enforced inhalation of cold and dusty air.

Cycle riding is most efficacious as a strength restorer to the weak and delicate. It is suited especially to organizations born healthy but enfeebled from lack of attention and exercise, and for the slight outlay of effort demanded, an unlooked for degree of health and strength is the reward. For weak chests, inactive bowels, labored breathing, a tendency to fatiness and impurity of blood, cycling is especially beneficial. Brain, chest and abdominal organs, derive great benefit from it as well as the mental faculties, in which this advantage is to be recognized, that it is not obtained in close rooms or dusty gymnasiums, but in the open air, or airy heights, through woods rich in balsamic odors, under God's glorious firmament.

The typical specimens of women of our modern civilization are not to be compared to the magnificent conformations of the Olympian days, when the eye of the anatomist could find pleasure for ever in gazing on inddiviuals whose muscular physique, were beautifully grand in its almost perfect development.

The North American Indian, whom many writers term the "child of nature" during centuries gone by, had an eye keen in its vision, an arm of powerful strength, lissom in his movements, and in form anatomically illustrious; and in whose features were reflected that glow of life, that inate joy and responsiveness that alone are the manifestations of inherent and nurtured physical vigor. To-day man does not endeavor to cultivate the powerful physique as he ought, forgetting in the pursuit of gain the truism —no muscle, feeble brain. Nevertheless, that individual has much to wonder at who attempts to measure the abyss which separates the refined citizen of the empire from the partially naked and almost savage barbarian. The intellectual achievement has been phenomenal, moreover, not without some sacrifice. We have in our midst the inventive genius, the wily craftsman, but we also have the delicate, the feeble, and that latest model of all, the manikin of the city. This withered, sallow, distinguished being, is the representative product of considerable expenditure; he is an outcome of civilization, and an unintentional conglomeration or characteristic manifestation of the lack of physico-mental-education.

The current literature of the day on the subject of "woman's rights" in existence is quite unnecessary. You cannot compare man with woman. God has fitted each man and each woman for his and for her specific sphere. Man to be sovereign in his empire, woman to be governess in hers.

The line of demarkation between man's kingdom and woman's kingdom is just as distinct as the boundary mark between Ontario and Quebec. A physician can weigh a grain of morphia on his scales, yet you cannot balance a man's opinion with a woman s opinion. Man is not necessarily more intelligent than woman. Woman is not necessarily more affectionate than man. Intuition teaches us to discern, easier than describe, when

man is in his adapted sphere and when woman is in hers, and so long as an individual performs acts that are consistent with God's laws we have no right to interfere. If a woman wants to vote let her vote. If a man wants to do embroidery work let him do embroidery work.

The majority of women in business to-day are there simply from force of circumstances. Verily, the abilities of women differ as widely as the abilities of men; one may be by nature adapted for commercial life, for teaching, for music, for writing, etc. A small proportion are almost void of all motherly or home-making qualifications, nevertheless, the prevailing opinion of man is that the ambitious aspirations of the larger proportion of maidens should be to become an M. A. (ma,) and a very practical cyclienne admits that cycling is the exercise (par excellence) for bringing about that highest state of development.

The entity of man differs widely from that of woman:—

"Man's love is of man's life a thing apart,
'Tis woman's whole existence; man may range
The court, camp, church, the vessel and the mart;
Sword, gown, gain, glory, offer in exchange
Pride, fame, ambition, to fill up his heart,
And few there are whom these cannot estrange;
Men have all these resources, we but one,
To love again, and be again undone."—Don Juan.

The rider sits quietly on her steel horse not bent forward like the runner, working mostly the lower limbs, which act like the driving rod of a locomotive. But the repose of the upper part of the body is only apparent; slight steering movements are necessary, and the muscles of the back come into play to preserve the equilibrium; while over rough roads the whole back is brought into action, and the muscles of neck and head are also fellow-laborers. With the cycle, by the firm hand-grasp of the steering

rod, the arms are in constant action, but there is no danger of shoulder contraction, as in desk work, because the hands are held far apart. The effort of propulsion necessitates deep breathing, by which the dead air of the lungs is repelled, and the chest, without any loss of elasticity, is greatly expanded with a consequent increase, from month to month, of chest capacity; so it is good advice to accountants and sedentary workers to take to the cycle and learn how to breathe.

Except in very short, slow runs, the exertion induces almost always a gentle perspiration, by which deleterious matter is removed from the system, but the cyclist seldom perspires violently even in severe long "runs" and races, which from a medical standpoint is not advised. There is no violent overheating, no precipitated pulse, nor reeking perspirations, neither are the reins of the riders' neck distended—a frequent condition in most severe physical exercises.

The greatest efficiency of cycling, then, is the strengthening tone given the muscles, the nutritive source as we have seen, and the conformable nourishment of the entire body. The increased muscular activity, aided by a gentle perspiration, destroys fat, while the defatening of the heart and large veins is of inestimable value from the freer circulation of the blood.

As we have seen, the whole organism is brought into brisk activity, when it is not to be wondered at that capacity for work is greater, sleep and appetite splendid. Really, cyclers digest meals as no other healthy women do, with this change of stimulus, this feeling of the inner organs, and the opposite in regard to the exterior of the body, an effect is produced on the nerves which no other remedy is capable of.

The excitement of modern life, which no class nor age can withstand, nervous prostrations in all its manifestations, are not compatible with cycling.

After a few weeks of this exercise, one manifestation of this disease after another disappears. We know of people who cannot enter a company of more than ten persons without suffering an unendurable dizziness, the glaring light of a chandelier produces in others outbursts of tears, others still are unable to read three pages of a book uninterruptedly. We know of individuals who cannot take a brush in their hands, of women in whom the ringing of bells superinduces stillness and melancholy. To these and many others, not only is this sensibility a real torture, but the risk of losing their daily bread is bound up with it. At the present day mediocrity goes for nothing. Superiority only reaches the desired goal, and for this effort are for the most part necessary, demanding extreme tension of the nerves which cannot be other than injurious.

But such an over-strained existence is not intended by the Creator. If so He would have constructed the brain so as to bear without injury this, drive, this over excitement, just as He has protected by a strong thread the heart of a horse from bursting—the horse. His own creation for speed. The present mental strain cannot be withstood by child nor adult.

To such sufferers cycling comes as a redeeming aid, provided a halt is called at the same time on the nerve drive. The clearing up of the dull head, the sweating activity of the pores of the skin, blood-distended muscles, increased nutrition, better blood composition, deep breathing of pure air, freeing the system of superfluous fat and water, better nourishment. These make a healthy body, and a healthy body brings the healthy mind. Energy returns. It is a pleasure to live. The impulse to work returns, and with it happy temper and contentment. In a few weeks the torturing, irritating sensibility of the nervous system disappears. It is then apparent that a discreet and proper use of the cycle is of great

efficiency as a remedial agent. And they to whom the pleasures of wheeling are unknown are void of one of the greatest enjoyments of life.

In the great draughts on the nervous systems of the women of the present day, what better counteracting influence than an hour or two of daily use of the bicycle? which is not the passive enjoyment of a carriage drive, but an enforced activity of body and mind which cannot be other than beneficial, to say nothing of the pleasures to the senses of this exhilarating locomotion. Those women who do ride are pioneers in a good movement, which should take its place among others for woman's advancement. Surely, naught can be greater than the physical well-being of the coming generation.

We believe in the gospel of "physico-mental-talent in the beatitude of comradeship," of generosity and happiness. Whoever is useful is happy, and whoever is happy is a success. Whoever plucks the fruit of his own good works is a good fellow.

MOUNT.

Beginners may mount from the curb-stone. Standing on the left of the cycle, holding handle-bars, the right foot is placed on the right hand pedal which is slightly in front of the vertical, meanwhile leaning the cycle slightly to the left, as the rider rises into the saddle, the weight placed on right pedal will start the cycle, a slight forward movement will allow the dress to fall evenly into position. This is an easy and graceful method.

DISMOUNT.

Just before left pedal reaches its lowest point, bring the right foot rapidly to the left, and step from the left foot. Let the cycle come almost to a stop before attempting to dismount. In emergencies swerve to the side that you are about to dismount.

The front wheel spoon brake is the best form now in use for ladies cycles, however, if the rider can thoroughly master the art of backpedaling, better dispense with the brake. A bell is essential. A lady's cycle, should be very light, strong, rigid, well braced, and fitted with a gear case or a properly adjusted dress guard.

There is hardly a Royal court in Europe into which the silent wheel has not found its way.

There is no reason why a fairly active woman of fifty or more should not learn to ride a safety if she chooses, and in many cases the swift two-wheeler would be found a renewer of youth, worth all the cosmetics of Madame Rachel, ten times more.

To prevent sun burn, rub glycerine or vaseline well into face before starting on a ride.

To remove sun burn, apply lemon juice and milk.

HINTS WRITTEN BY AN ACCOMPLISHED CYCLIENNE AT OUR REQUEST.

Light woven wool underware. No corsets. A skirt of hard finish, serge, not over three yds. wide slightly gored at top, length just to the ankles. I think weights are better to keep the skirt down than any other way, about 2 ounces of shot in little chamois bags to fall directly over each foot otherwise they would dangle and be inconvenient to the rider. Any kind of loose waist that can be worn without a belt. Belts keep a person very warm and are apt to be worn too tight. A cap with a peak to shade the eyes I find better than a hat as it does not catch the wind. I like loose cotton gloves better than any others. Shoes are better than boots. Sun burn, I have never given it any consideration, but I would suggest wearing while cycling, M. M. E. Pinault face mask for those who are afraid of the sun or do their cycling in a cellar. To remove sun burn my advice would be,

leave it to nature. Collars are not comfortable to wear. I do not think it well to ride after a full meal—take something light. I do not think it advisable to drink much while on the road. As to hill climbing I really do not know how I got in the knack of it, it seemed to come as a matter of course and back pedaling the same. I think if a person is nervous and feels disinclined to ride, the best remedy is to go and you will soon overcome it and not feel that way. I do not like the sidewalk to ride on, it makes me very nervous. I feel that I could go any place on the road.

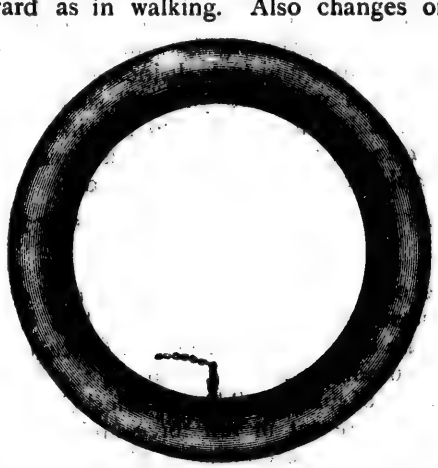
ESSAY BY AN M. L. A. WHO IS A PRACTICAL CYCLIST.

Some one has said that "the women who has never been on a cycle has missed half her life." One of the most pleasing sights of Chicago, during the past summer was to be seen on the Boulevard at the hour of sunset. The "Ladies' Cycle Clubs" of the city were out in full force and in their becoming costumes presented a pleasant picture to the observing visitor. Their happy faces testified to the enjoyment and benefit derived from this exercise. The mere motion of the wheel in itself produces a most exhilarating sensation on the rider and is conducive to both physical and mental health. Add to this the variety of scenery, the entire change from the monotony of the office, the school-room or the worry and care of domestic life and the charm is complete and we feel every fibre of our bodies tingling with delight.

The question is often asked "is cycling healthful exercise for women?"

Some physicians say it is not "and that a woman might as well run a sewing machine as ride a cycle for the motion is exactly the same." This is, of course, usually given by the persons who have no experience of either running a machine or cycle. In using a machine the work is done largely by a for-

ward and downward motion of the extensor muscles of the leg toward the ball of the foot, and the muscles act simultaneously in both feet. These motions are strained and unnatural. In cycling the motions are upward, downward, forward and backward as in walking. Also changes of level



DUNLAP PNEUMATIC TIRE, 1894.

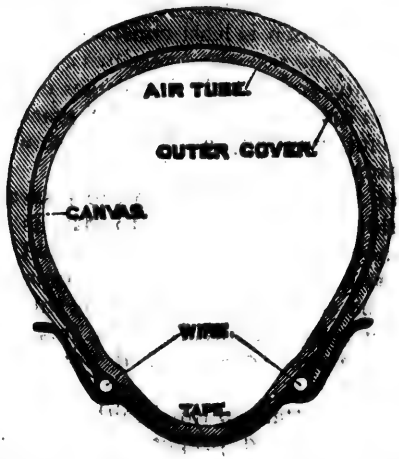
brings one set of muscles into vigorous use while it rests others. In cycling the hands, arms and shoulders are brought into constant and varied motion. The position is erect, or ought to be; the lungs freely expanded, the action of the heart accelerated aud the circulation stimulated. Pure oxygen take the place of poison di-oxide. New life responds to the healthful impetus.

Contrast this exhilarating exercise in the open air with bending over a sewing machine in perhaps a close atmosphere and the difference is at once apparent. If any one is not convinced just try the two experiments and, methinks, your convictions will become settled forever.

As in skating and horseback riding so in cycling

there is a psycological as well as physiological effect of exercise and the former enhances or modifies the latter to the degree that is impossible to accurately estimate the value of the one without including the other.

Walking gives too little occupation to the mind,



DUNLAP PNEUMATIC TIRE, 1894.

and ought not to be indulged in by any person wearied either mentally or physically. But benefit is derived by a canter on horseback or a spin on a cycle, no matter how tired one feels. Any woman who can walk, can ride if she will. Those who find a short walk exhausting ought not to attempt at once the speed or distance that those more strong can accomplish without difficulty. For restless sleeplessness riding is an excellent remedy and you will sleep as you, perhaps, have not done for years.

Many of our beloved Queen's grand-daughters are enthusiastic cyclists. In many notices of weddings we see among other items "A part of the wedding trip will be made a—wheel."

A lady suitably dressed for riding is not nearly so conspicuous upon a cycle as she is on horseback, or even in walking. No modest woman likes to do anything to attract attention to herself. This debars many from the healthy exercise of riding.

The most suitable dress for riding therefore for ladies is that which is least conspicuous.

The mounting the wheel requires a little practise, women, quick to grasp the intricacies of all sorts of work, soon discovers the secret of graceful riding and graceful mounting after a very short siege of awkwardness.

One of America's greatest writers says, "What the world wants or needs to day is healthier women, not women fairer or plumper but healthier. Women with more vital resistance, women who can perform the duties devolving upon them without these ever recurring break downs, this everlasting war between the enfeebled and would-be healthy organs."

Woman can attain to this healthier condition by proper dressing and proper exercise. Exercises which they enjoy and which, therefore, attract them are the ones which succeed.

If only women would realize the value and sterling qualities the cycle possesses. If they would appreciate what a tonic it is for listless energies and worn-out brains, they would throw away the medicine chest and drink in the pure air of the country, and take exercise daily.

The cycle, certainly, offers one of the best and also one of the most attractive means, for receiving this much needed air and much needed exercise. It can be indulged in by the most timid as well as the self-confident. How comparatively few ladies would think of giving up skating because of timidity or nervousness. They know too well that this exercise benefits them, taking away the feeling of weakness and dependence.

Shall not then the women of Canada take up this later, less fatiguing, more exhilarating and more beneficial exercise. Take it up quietly but persistently, till to ride a cycle will in no wise be looked upon as a novel or immodest pastime, and therefore will cease to attract notice, criticism or comment.

Now, when it is feared by the pessimistic that the higher education of women will interfere with their maternal functions, no kind of exercise can be as beneficial to them as cycling. My attention has been called to this fact by a letter I have just received from a woman doctor of Chicago, who has been practising medicine successfully for the last seventeen years, and can therefore speak from experience. She is an enthusiastic cyclist. She writes: "So many of our women of to-day are complete failures in child-bearing, that in looking for a sound, natural reason I find it, or I think I do, in the fact that they take very little exercise which developes pelvic and thigh muscles. Women and girls are pushed into this quiet by dress. Those who think all forms of sport unwomanly should lay this to heart. The fact is that women are physically in need of as good sound exercise as men, and it may be, by emancipating themselves from the old conventions and sharing manly sports as well as manly studies, they will do much to counteract the physical weakness which is their inheritance from their mothers and grandmothers, whose noblest ideal was to stay at home in ladylike repose of mind and body."

We advise every reader who wishes to become well versed in the Science and Art of Cycling to read "The Art and Pastime of Cycling," by R. J. Mecredy and A. J. Wilson; published by Mecredy & Kyle, 49, Middle Abbey St., Dublin, Ireland.

TOURING.

"To him who in the love of nature holds
Communion with her visible forms."

Touring on a cycle, in Canada in the summer season, with a fair companion, who is well versed in nature, is the most pleasant, profitable, heathful, and instructive enjoyment known to cyclers. Although, as the German would state it, our climate surpasses that of the fatherland—Britian—Canadians enjoy touring in Great Britain and Ireland almost as much as in their native Canada.

"When men unto their noblest rise,
Alike forever see their eyes;
Trust us, grand England, we are true,
And, in your noblest, one with you."

W. D. LIGHTFOOT.

Doubtless foreigners touring through Canada will find it the most interesting country in the world and it is only in justice to our country to state that for a salubrious climate and a productive soil Ontario stands pre-eminent, as those who have cycled through it always express, and nearly all its inhabitants bear that patriotic spirit within their breasts, and claim that we stand for such a national development as will make this country a great country, a united country, and a nationality in itself, and that the judicious application of a protective tariff has knit together the sinews of our nationality in the great bond of mutual trade intercourse, as well as in ties of sympathy and allegiance; and it may be reasonably expected that this union of our people on the basis of Canada for the Canadians will continue to grow stronger and more vigorous as time rolls on, and the cycle

is adopted by every people, kindred and nationality throughout the wide world, within the verge of the immensity of space.

Prior to going on a touring expedition the individual should get somewhat into condition, unless he has been recently riding, even a ten mile's run may make him feel uncomfortable. He should prepare by a fortnight's steady practice, beginning with 5 or 10 miles, and increasing from day to day, until he feels that he can travel with ease a considerably longer distance than he actually proposes as his maximum. For the last day or two his rides should be in full marching order—i. e., carrying the full amount of weight, in the way of luggage, etc., that he proposes to take on his tour, by this means he can practically prearrange every article to be taken as luggage.

The wheel selected should be of the best, and as light as possible, consistent with strength. It would not be very pleasant for the tourist to have his wheel collapse perhaps miles away from any repair shop.

F. Bryers' Cycling Road Guide and Map are indispensable essentials whilst touring in Canada. Many cyclers tour without deriving much benefit from it.—"Festina Lente." The greatest study of mankind is man. Converse with the natives, observe their manners, habits, endeavor to get a drift of their minds, and perceive what a vast difference of opinion there is in mankind, and as you proceed practically demonstrate to all those with whom you are brought, that your dignity is as much with you now as when sitting in your own church pew.

"Say, should the philosophic mind disdain
That good which makes each humbler bosom vain?
Let school-taught pride dissemble all it can,
These little things are great to little man;
And wiser he whose sympathetic mind
Exults in all the good of all mankind."—Goldsmith.

It is impossible to state what should or what should not be taken, as dress, luggage, tools, etc., one person would take a musical instrument, another a chess board, microscope, camera, revolver, fish hooks and line, or a book of poetry, much will depend on the condition of the roads and season of the year. The tourist had better seek amusement in his immediate surroundings rather than burden



THE LAFORCE PNEUMATIC TIRE,

TORONTO, ONT.

himself with articles that are at his hand when at home. Some form of eye protector is a necessity against insects and the sun. Never allow yourself to become faint for want of food, it will take more strength and energy out of you than you can replace in a day.

As to food and dress see folio 102 and 97.

Nature's calls must always be attended promptly. Men do nothing excellent but by imitation of nature.

Aristotle taught the doctrine "Art must imitate Nature." then the artist may cycle to the woods to perfect his art.

"Who never knew misfortune, lived but half;
Who never wept, ne'er heartily did laugh;
Who never failed, could scarce have striven and wrought,
Who never doubted, hardly could have thought."
—Schiller.

As to the happiness enjoyed, profit received, etc., it will depend almost entirely on the choice you make of a companion. If it be to obtain a knowledge of the inhabitants of a country select one who is versed in the history, etc., of that people; the same applies to the country itself, or to natural curiosities, etc.

He had travel'd 'mongst the Arabs, Turks and Franks,
And knew the self-loves of the different nations;
And having lived with people of all ranks,
Had something ready upon most occasions—
Which got him a few presents and some thanks.
He varied with some skill his adulations;
To "do at Rome as Romans do," a piece
Of conduct was which he observed in Greece.
—Don Juan.

When you approach a shady wood, and lock your cycle by the wayside, and ramble among the

trees, if there be any love for nature inherent within thy bosom, though it may have lain dormant in all the years gone by, and as you sit thee down upon the leaves and behold the ethereal firmament above and the verdant landscape below, and contemplate the scene, you may begin to think that after all man does not fully appreciate the beauties in his surroundings, how indiscribably excellent the works of an all wise providence are, and now you will begin to realize, that,—

"There is a pleasure in the pathless woods,
There is a rapture on the lonely shore,
There is society, where none intrudes,
By the deep sea, and music in its roar:
I love not man the less, but Nature more,
From these our interviews, in which I steal (wheel)
From all I may be, or have been before,
To mingle with the Universe, and feel
What I can ne'er express, yet cannot all conceal."
—Byron.

To maintain physico-mental vigor, and long life, rest in the form of diversion must be obtained.

There was once a road leading out of a large city on which more horses died than on any other, and investigations revealed the fact that it was perfectly level. Consequently the animals in travelling over it used only one set of muscles.

Continuous employment of the same physical powers on the same lines involves exhaustion and deterioration. It is varied and symmetrical exercise of all the muscles that is the base of any sound system of physical training. The same principle is rightly applied to the mental functions. It is not the work that breaks down the men of our time, altough it is the busiest of all ages, what is destructive to nervous force and intellectual vigor is continuous concentration of purpose upon the same object. What the great majority of workers need is not the rest that comes from complete

cessation of activity, but rather the rest that is involved in change of employment and thought.

If thou art worn and hard beset
With sorrows, that thou wouldst forget,
If thou wouldst read a lesson, that will keep
Thy heart from fainting and thy soul from sleep,
Go (cycle) to the woods and hills!—No tears
Dim the sweet look that Nature wears.
—Longfellow.

Enforced activity in many instances is an excellent remedy for hypochondriacs. "Work and be well," is a better axiom than "Laugh and be well." The savage Æsculapius of the North American Indians orders such individuals to be beaten into health.

Good health is sought by all; too often vainly. The cyclist feels better, stronger and more active after each ride, and those who neglect this exercise feel that their health suffers. They have only to stop riding to learn the answer to the question and, finding that riding exhilarates and that in ceasing to ride they loose this cheerful feeling, they become enthusiasts.

It has ever been so, my friend, and will ever remain so:
Weakness has rules for itself,—vigor is crowned with success.—Schiller's law of nature.

Let the man who is stripping for the race of life account no time or money as wasted that contributes in any way to his physical health,—that gives tone to the stomach, or development to the muscles.

The letter m, indicates masculine; f, feminine; n, neuter; pl, plural.

	FRENCH.	GERMAN.
Alarm-bell	Tim· re, m.	Alarmgloke, f.
Axle	Essieu, m.	Achse, f.
Bearing	Coussinet, m.	Lager, n.
Plain-	uni, m.	"
Cone-	a cone, m.	Konuslager, n.

	FRENCH.	GERMAN.
Ball-	a billes, m.	Kugellager, n.
Bicycle	Bicycle, m.	Zweirad, n.
Brake	Frein, m.	Bremse, f.
Cement	Ciment, m.	Kitt, m.
Chain	Chaine, f.	Kette, f
Driving-	de transmission, f.	Triebkette, f.
Safety-	de surete, f.	Sicherheitskette, f.
Crank	Manivelle, f.	Kurbel, f.
Cycle	Cycle, m. [man, m.	Fahrrad, n.
Cyclist	Cycliste, m; Veloce-	Radfahrer, m.
Enamel	Email, m.	Email, m.
Enamelled	Emaille	Emaillirt
Felloe	Jante, f.	Felge, f.
Footrest	Repose-pieds, m.	Fuss-stutze, f.
Fork	Fourche, f.	Gabel, f.
Handle	Poignee, f.	Griff, m.
Handle-bar	Barre du gouver-	Lenkstange, f.
Hub	Moyeu, m. [nail, f.	Nabe, f.
Keyed	Clavete	Gekeilt
Knapsack	Valise, f.; Sac, m.	Tornister, m.
Lamp	Lanterne, f.	Laterne, f.
Lever	Levier, m.	Hebel, f.
Link [rier	Maille, f.	Ring, m.
Luggage-car	Porte-charge, m.	Gepackhalter, m.
Machine	Machine,f.;Cycle,m	Maschine, f.
Mud-guard	Paracrotte, m.	Kothflugel, m.
Nickelled	Nickele	Vernickelt
Nut	Ecrou, m.	Mutter, f.
Oil	Huile, f.	Oel, n.
Oil-can	Burette, f.	Oelkanne, f.
Padlock	Cadenas, m.	Vorhangeschloss, m
Pedal	Pedale, f.	Pedal, n.
Rubber	Caoutchouc, m.	Gummi, m.
Saddle	Selle, f.	Sattel, m.
Screw	Vis, m.	Schraube, f.
" to	Visser	Schrauben
Screw-driver	Tournevis, m.	Schraubenzieher, m
Spanner	Cle a ecrou, f.	Mutterschlussel, m.
Spoke	Rayon, m. [ons f.	Speiche, f.

	FRENCH.	GERMAN.
Spoke-tightener	Cle a visser les rayons	Speichenspanner, m
Spring	Ressort, m.	Feder, f.
Step	Marchepied, m.	Aufsteigetritt, m.
Strap	Courroie, f.	Riemen, m.
Tools	Outils, pl.	Werkzeuge, pl.
Tool-bag	Sacoche a outils, f.	Werkzeugtasche, f.
Tricycle	Tricycle, m.	Dreirad, n.
Unscrew, to	Devisser	Losschrauben
Wheel	Roue, f.	Rad, n.
Whistle	Sifflet, m.	Pfeife, f.
Wrench (see Spanner)		

LEGAL.

BY T. M. HARRISON, BARRISTER, STRATFORD, ONT.

The ordinary cyclist is, perhaps, the most law abiding, and at the same time, the most generally abused wayfarer that has been known to our highways during the last decade. He sets out for a run over some road, in not very extensive use by the wheel, and some unfortunate individual, whose education has been entirely bucolic, and whose horse, harness and wagon is scarcely of the market value of the cyclist's wheel, undertakes to run him down, in much the same spirit that he would hunt a black squirrel or a ground-hog, "just for the fun of the thing," and if the cyclist is hurt, it seems to take the rural brain of the pursuer some time to realize that he has run over a human being. If, however, he is informed, that he will be obliged to pay for the wheel he has damaged, he thinks it as absurd as asking him to repair the wing of a butterfly that he may have caught or crushed. I am very sorry to be obliged to state that some of our learned County Judges have concurred in this view of the case, and have considered the cyclists as not deserving the same protection that those who ride on other vehicles receive. Fortunately, however, the great majority of the judiciary take another view of the case, and hold, that under ordinary circumstan-

ces, a wheelman has a right to the right half of the road, when meeting other vehicles, and to the left half when passing them.

If it should be found impossible for a vehicle to turn out, on account of it being heavily incumbered, or for other reasonable cause, it is the duty of its driver to stop when meeting or being passed by other vehicles.

In spite of all this legislation there are collisions and accidents, without number, on our highways. When a collision occurs, it must necessarily be by design, or accident. If by design, those who brought it about are criminally guilty of either malicious injury to property, or assault, or both. They are generally guilty of both.

To constitute the malicious injury to property, it is necessary to prove that the injury occurred, and that it was done intentionally and knowingly; and to prove assault, the effort or threat to injure the person of some one must be proved, while if such effort be successful it constitutes assault causing bodily harm, or something worse, according to the magnitude of the injury.

Where the collision occurs by accident, the law is rather more complicated. If the accident is due to the carelessness of both parties, neither can collect damages from the other.

What constitutes carelessness is a question for juries to decide. If a man drives his vehicle on the wrong side of the road without special cause, it is undoubtedly a careless act. Yet the party who runs into him, under such circumstances, is also guilty of carelessness, if he could have avoided the collision by exercising reasonable circumspection.

When, however, the collision takes place through the carelessness of one party only, while the other, or others, have taken due precaution, the careless individual is responsible for all damage occasioned those, who exercised reasonable care.

If again, the wayfarer, after exercising reasonable

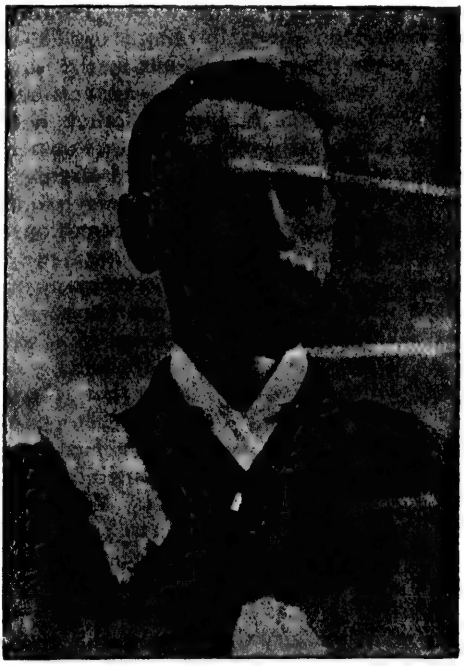
precautions, is injured through some fault of the highway, of which he is probably unaware, the corporation, whose duty it is to keep the highway in repair, is to blame, and is consequently responsible, in damages, to the extent of his injury.

And now for the last and most ignominious of the annoyances, the unfortunate cyclist usually meets with in his rides. I mean, the dog that rushes from the gate beside the way, and comes at him, the very essence of insult, as though to give expression to the pent up ill will of its owner, who, too often unseen, can yet be heard urging it on. For strange to say, the cyclist, by merely daring to adopt an improved method of locomotion, seems to constitute himself, the enemy of many of his less progressive fellow creatures, and many of them, who have not the courage to express their ill-will openly, covertly set their dogs on him with the greatest gusto.

If the owner of a dog knows, that it has ever attacked any person,—and he is presumed to know it, if it can be proved, that the dog has ever been guilty of such an act—he is responsible in damages for every injury the dog commits. Yet if one kills such a dog, for other reason than self-defence, he is responsible therefor in damages to its owner. Of course, when a man sets his dog on another man, he is guilty of assault, and criminally responsible for all the injury that may result therefrom. I am however very sorry to say, that if, without apparent prompting, a dog contents himself by merely barking and snapping his teeth in most uncomfortable proximity to the cyclist's calfs, unless the cyclist discovers, that he is in immediate danger, from which he cannot otherwise escape, and then and there slays the animal, he has no other recourse.

I may state in conclusion, that neither the driver nor owner of horses, is responsible for the injury he may do while running away, and beyond con-

trol; and that the law will scarcely hold a man guiltless, who persists in riding his machine, after it is evident to him, that if he does so, he is sure to cause a runaway.



REV. I. B. WALLWIN, B. A.
STRATFORD, ONT.

The Rev. I. B. Wallwin, B. A., pastor of Waterloo Street Methodist Church, Stratford, is an enthusiast, and a graceful and skillful rider. He rides a Brantford, and makes his wheel stand for both use and pleasure, doing most of his pastoral work thereon, besides making it a means of physical culture and enjoyment. In a recent address on Physical Culture he said, "To me one of the objects of

greatest interest at the World's Fair was the bicycle. Alongside of our modern polished belt-bearing, pneumatic cycles was the first one constructed, which had no nickel, no spring seat, but only a single wooden bar stretched between the wheels, no gearing, and no saddle, but built of wood and just high enough for the rider with his toes to touch the ground and so propel it. Then cycling was like 'riding on a rail,' but now like riding on the wings of the wind, or floating in the illimitable ether.

Whatever the means used to attain it, physical culture is the first principle of manhood, the first in time and scarcely second in importance. One may make a very good angel without a body, but lacking a robust physique in this work-a-day world he will not make a very good man. Health of body ministers to vigor of mind, and both to vigorous moral excellence. The most intellectual of ancient races, the Greeks, in their national games and earnest physical discipline laid the foundation of their greatness. A morbid body also will make to its possessor everything dark and blue, both the ways of God and man, and induces garrulous pessimism and unbelief."

Good morning, fellow Wheelman! here's a warm, fraternal hand,
As with a rush of victory we sweep across the land!
If some may be dissatisfied to view the way we ride,
We only wish their majesties could wander by our side!
For we are good philanthropists—
Unqualified philanthropists—
And would not have our happiness to any one denied.
We claim a great utility that daily must increase;
We claim for inactivity a bright and grand release;
A constant mental, physical, and moral help we feel,
Which bids us turn enthusiasts, and bless the silent wheel!—Col. Pope's Columbia Calendar.

CYCLING ROAD GUIDE.—F. Bryers, Toronto.

Hamilton to Windsor.

MILEAGE.		TOWNS	HOTELS.
		Hamilton	Royal
7		Ancaster	Henderson's
5·5		Alberton	
4		Langford	Maple Leaf.
4		Cainsville	
3	23.5	Brantford	Kerby.
7		Mt. Vernon	
1.75		Burford	Barnea.
4.5		Cathcart	
8		Eastwood	Cornish's.
4	48.75	Woodstock	Commercial.
4.25		Beachville	Fuller's.
4.5		Ingersoll	Atlantic.
6		Thamesford	McCartney's.
8		Crumlin	
5	76.5	London	Grigg
6.5		Lambeth	
11.5	94.5	St. Thomas	Grand Central
7.5		Fingal	
3.5		Burwell's Corner	
2.5		Iona	
5.5		Wallacetown	Drumgold's
4.75		New Glasgow	Eagle
6		Clearville	
12	136.25	Ridgetown	Grand Central
9		Blenheim	Nestor
4		Buckhorn	
9		Dealtown	
10.5		Romney	
6.25		Wheatley	
7.25	182.25	Leamington	Scott
3.5		Ruthven	
7.5		Cottam	
5.25		Essex	Royal
4		Maidstone	
4		Oldcastle	
8	214.5	Windsor	British American

Leave Hamilton by King street west, until Hamilton and Dundas R. R. is passed, then south to Ancaster over good stone road, rather hilly; thence west to Brantford, road fair. From Brantford to Woodstock is fairly level, mostly good gravel with some sand, and A1 after rain. Leave Woodstock by Dundas street to Woodburn Mills, then west to Ingersoll and London, over good gravel roads. Leave London by York street bridge and along Wharncliffe road to Lambeth and south to St. Thomas, good gravel. Thence via Talbot road to Burwell's corner and north to Iona and west to Wallacetown, the latter part of the road being hilly. Very heavy sand between Wallacetown and Ridgetown, with many hills, then road improves in surface and hills disappear, becoming finally a regular race track.

At Brantford the tourist can turn south to Lake Erie shore at Port Dover (24 miles), where a pleasant day might be spent, though portions of the route are sandy. Secretary Donly, of the C. W. A., is only eight miles distant from Port Dover and would welcome any stray member of the flock to Simcoe.

By continuing straight south from St. Thomas 9 miles, Port Stanley, another summer resort, is reached. The road is good.

Kingsville, eight miles due west from Leamington, is a pleasant resort and the rider may again join the main road near Cottam, or in fine weather continue straight on to the Detroit river at Amherstburg, riding along the river bank to Windsor. This road is not very good, but the scenery will amply repay the rider for any small inconveniences.

Information received from J. G. Gauld, Hamilton, A. D. Bowlby, of Windsor, R. H. McConnel, St. Thomas, and the late Chas. Duncan, of Brantford.

Toronto to Gravenhurst.

MILEAGE.		TOWNS.	HOTELS.
		Toronto	Walker.
5		Eglington	Oulcott's.
7		Thornhill	Steele's.
4		Richmond Hill	
4		Bond's Lake	
4	24	Aurora	Lemon's.
4		Newmarket (a)	Forsyth.
4		Holland Landing	Sheppard's.
3		Bradford	Bingham.
9		Churchill	
8		Painswick	
3	55	Barrie	Queen's.
6		Shanty Bay	
8		Hawkestone	
2-5		Oro	
8	79-5	Orillia	Orillia House
3-5		Ardtrea	
6		Washago	
2		Severn Bridge	
10	101	Gravenhurst	La Frena.

(a)—Right hand

		Newmarket	Forsyth.
3-75		Sharon	
2-5		Queensville	
7-5		Keswick	
2-25		Belhaven	
6		Sutton	Mansion.
16		Beaverton	Hamilton.
9-75		Brechin	Overend's.
9		Uptergrove	
3-25		Atherley	Gaudaur's.
2-5	62-5	Orillia	Orillia.

Leave Toronto via Yonge street, over good ravel roads (better after rain), to Thornhill, from which point to Holland Landing the (two miles may be saved by not entering Newmarket) roads are much finer. At Holland Landing turn off Yonge street to the west over rough macadam to

Bradford, then over good gravel (with some sand) into Barrie. The hills on this road are numerous but all rideable, the worst being near Toronto. At Oak Ridges, between Bond Lake and Aurora is the height of land between the waters of Lakes Erie and Simcoe.

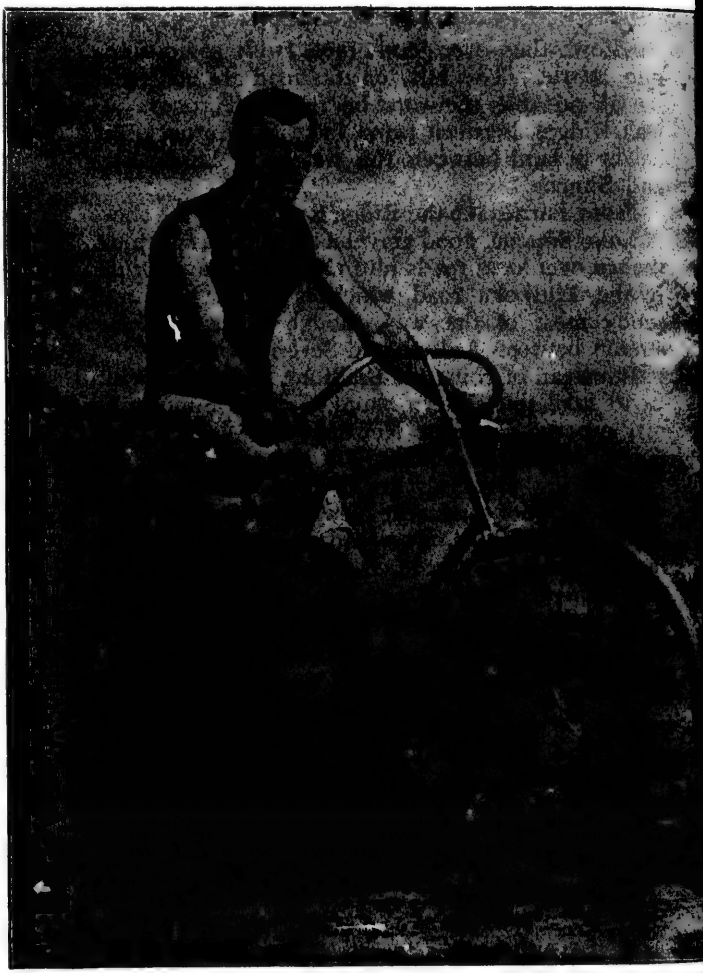
From Barrie take the Ridge Road along the shore of Lake Simcoe, good gravel as far as Hawkestone, thence over sand roads into Orillia. Leave Orillia by the Muskoka road, which is rather poor and sandy most of the way, though there is a fair stretch between Ardtrea and Severn Bridge.

If instead of going via Bradford, the tourist wishes to take the eastern shore of Lake Simcoe, he may proceed east from Newmarket, 1¼ miles then north to Keswick. This is a splendid route, the roads being first-class gravel nearly all the way, with a patch of sand near Newmarket and another beyond Uptergrove. The road is nearly all the way in sight of Lake Simcoe.

Information concerning routes received from Bert S. Cane, Newmarket, and Dan Cashman, Orillia.

TORONTO TO MONTREAL.

MILEAGE.	TOWNS.	HOTELS.
	Toronto	Walker
4.5	Norway	Warren's
6	Scarboro	
3	Highland Creek ..	Kellar's
2.5	Rouge	
2	Dunbarton	
1	Liverpool Market .	Secker's
2.5	Pickering	Gordon
6.5	Whitby	Royal
4.5	Oshawa	Queen's
10.5	Bowmanville	Bennett
5.25	Newcastle	Royal
6.25	Newtonville	
9.5	Welcome	
3.25	Port Hope	Queen's
8.75	Cobourg	Dunham



J. K. McCULLOCK, WINNIPEG, MANITOBA.

MANITOBA CHAMPION, 1890, 1892 AND 1893.

A 56 lb. special star carried him to championship honors in 1890. The Raleigh is now his favorite mount. Mr. McCullock is also one of the fastest skaters in America.

9		Grafton	
3		Wicklow	
5.5		Colborne	
9.5	103	Brighton	
11.5		Trenton	Grand Central....
11		Belleville	Queen's
9		Shannonville	
1.5		Milltown	
5		Tyendenaga	
7.25		Napanee	Paisley
11.75		Odessa	
5.5		Westbrook	
3.25		Cataraqui	
3.25	172	Kingston..	Frontenac, British America
12		Pitt's Ferry	
6		Gananoque	
8.75		Lansdowne	
9		Mallorytown	
8.75		Lyn	
5.5		Brockville	Grand Central
4.5		Maitland	
7		Prescott	Daniel's
6.5		Cardinal	
5.5		Iroquois	
7.25		Morrisburg	
9		Aultsville	
2.5		Farran's Point....	
4.25		Dickenson's land'g.	
5		Milles Roches....	
5.5		Cornwall	Rossmore
4.5		Glen Walter	
4.5		Summerstown	
6.5		Lancaster	
8		Curry's Hill	
9		Coteau	
1		Vaudreuil	
1		St. Anne's	
7		Pt. Claire	
7.5		Upper Lachine ..	
9	346	Montreal	Windsor

Leave Toronto by Queen Street East to Woodbine Racecourse, then north-east over fair macadam and gravel, road somewhat hilly to Whitby, very rough at Dunbarton. Thence east to Port Hope, roads very much improving (some hills). From Port Hope to Kingston (104 miles,) roads are excellent (gravel or macadam) with one or two easy hills. East of Kingston roads are not so good, but very fair wheeling to Cornwall, with some stretches of beautiful riding. Take Canal tow-path at Cornwall. From Cornwall to St. Anne's is soft clay loam, almost impassable after rain. Thence good riding into Montreal.

TORONTO TO SARNIA.

MILEAGE.		TOWNS.	HOTELS.
		Toronto	Walker.
5		Toronto Junction.	
3		Lambton Mills...	Scott's.
4		Summerville	
4.25		Cooksville	King's
9.5	25.75	Brampton	Queen's
7		Norval	
3.5		Georgetown	Clarke House
5.75		Ballinafad	
4.5		Brisbane	
10.5		Eremosa	
5.5	62.5	Guelph	Royal
5.25		Mosboro'	
4.75		Breslau	
4		Berlin	Walper
7		Petersburg	
5		Baden	
4		Hamburg	Commercial
6.5		Shakespeare	
7.5	104.5	Stratford..	Albion, Commercial
6.25		Conroy	
6.25		St. Mary's	Windsor
13		Thorndale	

12.5	142.5	London	Grigg
6		Hyde Park	
5.5		Lobo	
4.5		Poplar Hill	
9		Strathroy.....	Queen's
7		Adelaide	
11.75		Warwick	Restorick
9.75		Reede's Corner...	
14.5	210.5	Sarnia	Belchamber

Leave Toronto via Bloor street west and St. Clarens street into Toronto Junction, thence via Dundas (macadam) Road to Cooksville. Here turn north over clay road to Brampton and west over fair gravel and clay road to Georgetown, thence north to Brisbane and west over excellent gravel roads to Guelph. (The route from Georgetown via Acton and Rockwood in Route IV is five miles shorter but not nearly so good). Leave Guelph by Elora road, then west to Mosboro' and Berlin—a fine road—thence due west to Stratford. Leave Stratford via Erie street to St. Mary's—a beautiful stretch—Oct. 12—1888. W. N Robertson pushed a 50 in. Springfield Roadster hard tire (lever motion) from Stratford to St. Marys in forty one minutes. Aug. 1891. W. N. Robertson rode a 52 in. hard tire, Eagle ordinary over 10 miles of this Road with turn, in 35.30. These are records for this road.

Proceeding south from St. Marys along the county line and west to Thorndale, again south and west into London, the road being excellent.

From London to Sarnia the road is beautiful—level as a billiard table and gravelled all the distance. Six miles may be saved by not entering Strathroy, but as that is a fine town and there is very little hotel accomodation on the remainder of the route, it is advisable to run down there.

There are no hills of any size in this whole route and the country passed over is some of the best in

Canada. Those who participated in Dr. Doolittle's C. W. A. tour, July 1893, from Stratford to Sarnia were delighted with it.

TORONTO TO OWEN SOUND.

MILEAGE.		TOWNS	HOTELS.
		Toronto	Walker.
5		Toronto Junction .	
3		Lambton Mills ..	Scott's.
4		Summerville	
4.25		Cooksville	King's.
9.5	25.75	Brampton(a)	Queen's.
4.75		Edmonton	
3.5		Victoria	
8		Caledon	
6.25	48.25	Orangeville ...	Paisley.
13.5		Shelburne	
11.5		Dundalk	
5		Proton	
5		Flesherton	Flesherton.
6.5		Markdale	
5		E. Berkeley	
4		Williamsford.....	
7.5		Chatworth	
4		Ashley	
1		Rockford	
3	114.25	Owen Sound . .	Paterson.
		(a)—Left hand, west	
		Brampton	Queen's.
7		Norval	
3.5		Georgetown.....	Clark.
8		Acton.	
7.5		Rockwood	
6	32	Guelph.....	Royal.

Leave Toronto by Bloor street west to St. Clarens St., thence into Toronto Junction and via Dundas Road (good macadam) to Cooksville, where turn north over fair clay road to Brampton, to which point roads are level or slightly undulating. From Brampton to Orangeville the road is fair clay

for some distance, but near Caledon becomes sandy and very hilly too; going into Orangeville is a good gravel road. From Orangeville to Owen Sound the road is fairly good most of the distance and very fine towards the end An alternative route is to proceed west from Brampton over fair gravel road to Georgetown with poor sandy road, thence to Rockwood and good gravel into Guelph, where Route II is joined, which offers first-class wheeling to Owen Sound.

Particulars of routes received from Mr. James Wright, Toronto.

HAMILTON TO GODERICH.

MILEAGE.		TOWNS.	HOTELS.
		Hamilton	Royal St. Nicholas
5		Dundas	
3.25		W. Flamboro	
6		Rockton	
3.75		Sheffield	
6		Galt	Baker House
3.5		Preston	North American
3.5		Freeport	
4.5	35.5	Berlin	American
7		Petersburg	
3		Baden	
4		New Hamburg	Commercial
6.5		Shakespeare	
7.5	63.5	Stratford	Albion
4		Sebringville	
8.75		Mitchell	Hicks
5		Dublin	
6.25	87.5	Seaforth	Commercial
1.5		Egmondville	
5.75		Brucefield	
10		Bayfield	
12	116.75	Goderich	British Exchange
8.5		Clinton	Rattenburys
3.75		Holmesdale	
9	108.75	Goderich	British Exchange

(Stratford riders going out by Brucefield and returning by Clinton cover 98½ miles.)

(There are several little deviations between Stratford and Goderich not included in the above sufficient easily to make ½ mile.)

Leave Hamilton by King street, west following main road to Dundas, thence through main street of town, under G. T. R. tracks to Greensville on top of the mountain, thence to West Flamboro, turning north on Waterloo Road to Berlin. The road thus far is somewhat hilly, but with fair surface and fine scenery. Turn west at Berlin to Stratford, thence N. W. along fine gravel road to Seaforth. At Seaforth alternative routes are offered, the Brucefield route being probably the better and more picturesque though a little longer than via Clinton. The fine surface of this route will tempt riders to coast, but they should not do so unless the foot of the hill is in plain view from the top.

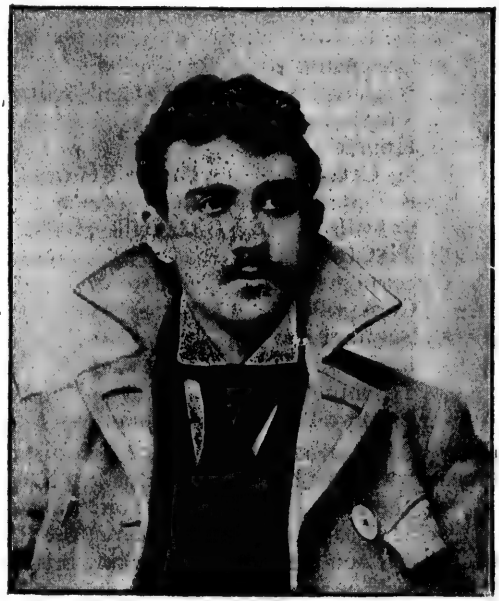
We are indebted to A. T. Neill, Hamilton, for report of route.

Niagara Falls to Toronto.

MILEAGE.		TOWNS.	HOTELS.
		Falls of Niagara	Parkside Inn
2		Niagara Falls Town	American
3		St. David's (a)	
9		Thorold	
1.5		Merriton	
2.5	15	St. Catherines	Grand Central
7		Jordan	
6		Beamsville	
5.5		Grimsby	
5		Winona	
5		Stoney Creek	
8	51.5	Hamilton	Royal
7		Burlington	
6.25		Bronte	
5	69.75	Oakville (b)	Oakville House
5.5		Lorne Park	Hotel Louise

2.5		Port Credit .....
8		Humber .....Duck's
5.5	91.25	Toronto .....Walker
		A Right hand—East.
		St. Davids .....
3.5		Queenston .....
5.5		Niagara (on the lake) Queen's Royal
3.5		Virgil .....
5		Homer .....
3		St. Catherines ....Grand Central
		B Left hand—North.
		Oakville .....Oakville House
4		Trafalgar .....
5		Springfield .....
2.75		Cooksville .....King's
4.25		Summerville .....
4		Lambton Mills ..Scott's
3		Toronto Junction
5		Toronto .....Walker

The tourist who has the time at his disposal should leave the Falls by the River Road to Niagara Falls town, thence to St. David's, branching east from that village to Queenston and along the River Road to Niagara-on-the-Lake. By taking this route the traveller will be in sight of the River nearly the whole distance and see the grand show sights, including the Falls, Suspension and Cantilever bridges, Whirlpool, Queenston Heights and Brock's monument. The road is fairly good and all down hill, but do not coast. From Niagara-on-the-Lake take the westerly stone road direct to St. Catharines. A more direct route to St. Catharines from the Falls is via St. David's and Thorold, branching west at St. David's. Leave St. Catharines by crossing canal and climbing western hill, thence direct to Hamilton, the whole road being good gravel and macadam. Leave Hamilton by York street and Lake Shore Road to Oakville, where choice of routes is offered to Toronto, the northerly route via Trafalgar and Dundas street being the better,



A. J. KNOWLES—You all know him.

Artie is well known as one of the Goold Bicycle Co's. travellers in the west—an enthusiastic wheelman and a hustler, par excellence. He has the faculty of always securing the best agents and riders to represent his wheel in all towns.

His great fort is talking up the Brantford wheel, and his genial disposition has secured him many friends. We do not hesitate in saying that in addition to being a capital salesman, he is one of the best advertisers in the cycle business.

though the Lake Shore Road via Port Credit is not bad unless after rain, and is certainly more picturesque. The hotels mentioned all cater to the cyclists.

Hamilton to Owen Sound.

Mileage.		Towns.	Hotels.
		Hamilton	Royal
5		Dundas	Collins' Hotel
2.5		Greensville	
3.75		Haveland	
3		Strabane	
2.25		Freelton	Duffy's Hotel
4.5		Puslinch	
1.25		Morriston	
2.5		Aberfoyle	
4		Farnham	
3.5	32.25	Guelph	Royal Hotel
3		Marden	
5.5		Barnett	
4		Fergus	Dominion
5		Cumnock	
6.75	56.5	Arthur	
4.25		Petherton	
3		Kenilworth	
1.75		Riverston	
5	70.5	Mount Forest	Coyne House
2.5		Egremont	
5.5		Orchard	
1.25		Murdock	
2.25		Varney	
3.5	85.5	Durham	Middaugh
7.5		Latona	
7.4		Sullivan	
4		Chatsworth	
4		Ashley	
1		Rockford	
4	112.5	Owen Sound	Patterson House

Leave Hamilton by King st. w., following stone road through Main street of Dundas, under G. T. R. tracks to Greensville, continuing north to Freelton. (The latter part of the road is somewhat heavy after rain, as it passes through a swamp.) A good gravel road runs from Freelton to Guelph. Leave Guelph by Woolwich street proceeding to Marden, where take the right fork of road going north-east to Fergus, thence to Mouut Forest, the whole distance being over fine gravel roads. Leave Mount Forest by the Garafraxa road which leads straight into Owen Sound. These roads are somewhat hilly, but the surface generally is good, with some perfect stretches.

RUBBER FOR TIRES.

The annual exportation of India rubber from Para is said to be upward of twenty million pounds, worth from six to nine million dollars. The rubber tree of Brazil (siphonia elastica, a near relative of the ficus elastica of the East Indies, and the urceola elastica of Asia), is really a giant species of milk weed. It begins to yield when about fifteen years old, and the Government has repeatedly suggested plans for cultivating it, by planting large areas with trees and conducting the business like that of coffee and sugar plantations. But the Brazilians seem to be peculiarly devoid of the power to take "a long look ahead," and so far nobody has been found willing to wait fifteen years for the first returns on an investment.

The hunter as he goes his daily rounds, makes a number of fresh cuts around the trunk of each tree which he has previously marked as his own especial property, pro tem, and sets his little clay cups to catch the valuable sap that will ooze from the incision. Later in the day, he repeats the round,

carrying a queer sort of bucket made from a big gourd, which has a cover and handle of braided palm fiber, and into it he empties the collected contents of all the little cups. When he gets back to camp, he pours the juice from the calabash pail into the mammoth shell of a torturuga, or Amazon turtle. In that state the yellowish-white fluid resembles good, rich Jersey cream more nearly than anything else to which I can compare it.

Different ways of coagulating it into the article known to commerce are practiced in various parts of the world. Here it is held on a wooden paddle over a fire of palm nuts which has been built under a clay pot shaped like a huge lamp chimney. The dense, white smoke issuing from the top of the pot, hardens it into a leathery substance, and at the same time changes its color from pale yellow to black. As fast as it hardens, more sap is poured on, until the mass of rubber on the paddle is as heavy as a man can handle; when it is sliced off with a huge knife.

In Central America, the fluid is coagulated with the sap of a wild vine somewhat resembling the grape, which overgrows all these tangled forests, and acts the part of rennet to cheese curd, or "mother" pulque, to crude maguey juice, for after its addition, the milk soon hardens into hard cakes of India rubber, all ready for transportation. In other places it is solidified by evaporation of the liquid part in the sun, and is then completely dried in kettles suspended over a wood fire.

In the great warehouses of Manaos and Para, you may see enormous masses of dried caoutchouc sap, resembling cheeses, awaiting shipment. By the way, the native word for India rubber (caoutchouc) sounds much like a sneeze and is pronounced as if spelled kee-chook, with the accent strong on the first syllable. The milky juice, which now plays so important a part among the world's productions, was first made use of by the Indians of

Costa Rica, and by them made known to their conquerors. Early as 1513, the Spaniards in Mexico had learned its use.

PNEUMATIC TIRES IN GENERAL, AND THE DUNLOP DETACHABLE IN PARTICULAR.

TO DETACH THEM.

1. Deflate the tire by unscrewing the valve-stem, laying the wheel flat.

2. Take hold of the tire on the side farthest away from the valve, and press one wired edge down into the bed of the rim with the thumbs; then run the thumbs in opposite directions, round the wire, pressing it firmly into the bed of the rim until they approach each other near the valve, where the wire will then loosen and form a loop above the edge of the rim. Slip the finger-tips under this loop at valve, lifting the wire over the edge of the rim, and pass them around until the whole edge of the corner comes off. Then draw out the air-tube.

3. Remove the valve-stem, push the valve into the rim and thus remove the air-tube and valve bodily. Replace the valve stem.

4. Slip the remaining wire edge off the rim.

5. To replace a spoke, remove the tape which covers them by peeling apart the two ends where they are fastened together with solution

TO REPLACE TIRE.

1. Refit the tape by stretching it over the spoke heads and uniting the ends as before, with solution.

2. Slip one edge of the cover on to the rim.

3. Replace the air-tube and valve as before.

4. Slightly inflate the air-tube so that it will become circular and lie in bed of the rim. This in order not to nip it under the wired edge of the cover, when replacing the remaining side.

5. Slip the remaining edge of the cover over the rim, commencing opposite valve and pressing the wire into the bed of the rim with thumbs, moving them in opposite direction until they meet directly over valve, when wire will spring into place.

6. Inflate the tire a little more, then examine the wired edges and see that they are resting properly in the shoulders of the rim. Should the tire bulge out at one place, and appear thin at another, pull the cover out at the thin place until the wires rest properly on the shoulders, and where the cover bulges, press the wire down to the shoulder, adjusting them thus until an even tire is produced.

7. Inflate the tire hard, and see that the valve-cap is firmly screwed up.

Use no tool whatever in any of the above operations.

The maker should see that spoke heads do not project over surface of rim.

That rims should be enameled on both sides before tire is attached; of course, tires must not be put into enameling stoves.

That tire should not be manipulated with greasy hands, as it does not improve appearance of machine when finished and is injurious to the rubber.

Keep your tire inflated hard. Never ride them when at all deflated if you wish your tires to give perfect service and last for years. Do not inflate the inner tube when unprotected by the outer cover any more than is necessary to just fill it, or the rubber will rupture.

TO REPAIR PUNCTURES.

A puncture can be repaired in from two to five minutes.

It is always possible to repair punctures without removing wheel from frame.

Remove outer cover as already described.

If the puncture cannot be located, the whole tube

must be withdrawn in the manner already explained, in which case, having taken the tube and valve out of the wheel, replace valve stem, slightly inflate tube, and find the leakage by immersing the tube in water. If necessary, stretch the tube a little at a time under water, until bubbles rising reveal the location of the puncture.

Clean all the gray deposit off the tube by rubbing with sand-paper or scraping with the blade of a pen-knife for a sufficient space around the puncture for the patch to be put on. When clean rub so'ution on this space, and let it stand to dry. Rub solution on a patch of rubber cut to a suitable size and let it also dry; then apply a second coat of solution to each, and when it has become "tacky" like half dried varnish, apply the patch, pressing the edges down firmly; rub chalk over to prevent the sticky so'ution from adhering to the canvas-backed cover. If the puncture in the canvas-backed cover is at all large, it should be covered by a patch to keep the wet out.

Solution will not stick to the gray-powdered surface of the tube, but only to clean rubber.

Replace tube and cover on rim as before explained.

DUNLOP VALVE FOR 1894.

To inflate tire attach pump, loosen air stem by slight turn. To deflate, entirely remove air stem and press down the check valve in bottom of main stem with a pin.

"The Cyclist's Road Guide" is an indispensable adjunct to the tourist in Canada.

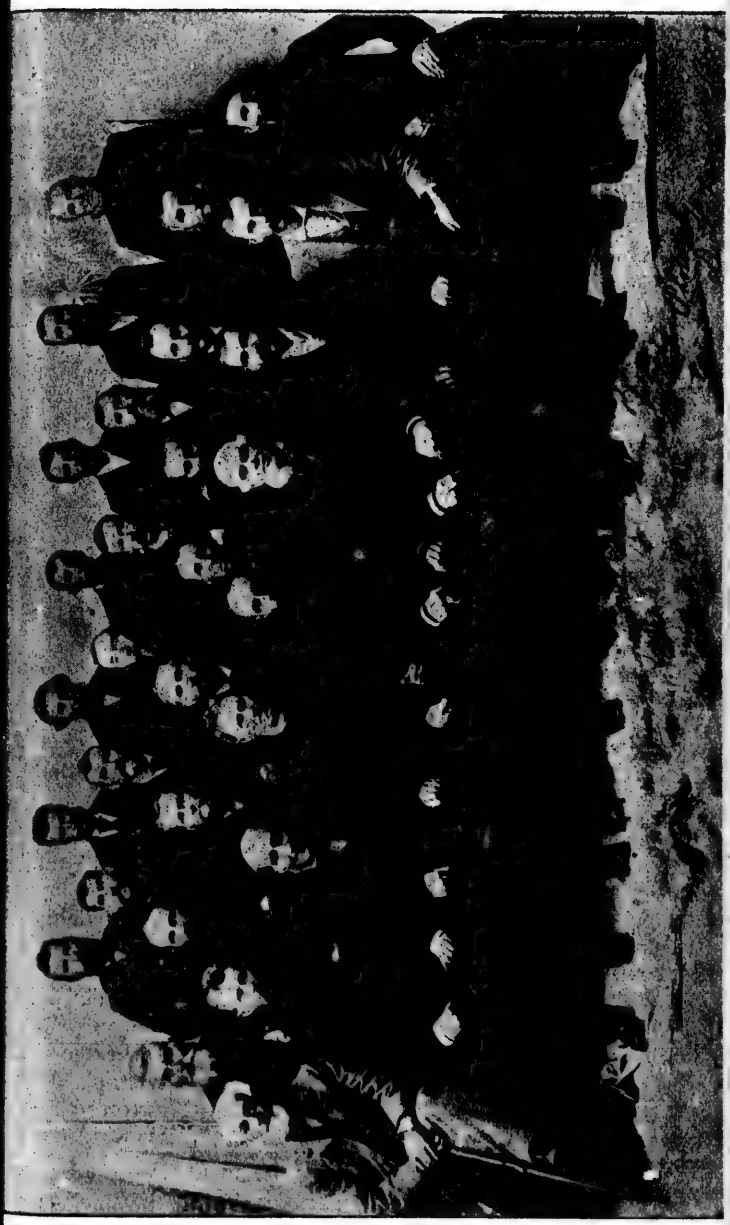
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The preceding are members of the Perth County Council—all earnest advocates of improved highways.

REPRESENTATIVES.	MUNICIPALITY.	POST OFFICE.
Berry, R.	Blanshard	St. Marys
Campbell, P	Hibbert	Cromarty
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Davidson, W	Stratford	Stratford
Dent, A	Mitchell	Mitchell
Dougherty, J	Mitchell	"
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Tughan, W. J.	Elma	Trowbridge
Yousie, A.	S. E. Hope	Tavistock
Zoeger, P.	Mornington	Newton

Table of Pace per hour and per second, computed by W. D. Smith, N. C. U. in The Cyclist Annual.

¼ Mile in Sec.	1 Mile in Min. Sec.	Per hour. Miles, yds.	Per second. Feet, ins.
25	1 40	36 0	52 10
26	1 44	34 1083	50 9
27	1 48	33 587	48 11
28	1 52	31 251	47 2
29	1 56	31 61	45 6
30	2 00	30 0	44 0
32	2 8	28 220	42 3
35	2 20	25 1257	37 9

CENTURY ROAD CLUB OF CANADA.

RULES AND REGULATION.

1. All amateur wheelmen are eligible to membership.

2. Wheelmen must qualify for membership by riding 100 miles according to the rules of the Club.

3. Actual elapsed time allowed 14 hours. Ladies shall be allowed 16 hours.

4. No track or asphalt allowed.

5. Entire distance must be made awheel or on foot; no taking of trains between points.

6. Centuries must be made in company when possible. If made alone satisfactory proof must be furnished of time of start, finish, etc.

7. No centuries allowed unless application is made within 30 days.

8. Upon application for Badge and Bar, and payment of initiation fee ($3 00), the applicant is presented with Club Badge and Bar, with date of making century engraved on bar.

9. Other Bars cost 75c. each.

F. J. WHATMOUGH,
Chief Centurion.

BEST TRACK RECORDS AGAINST TIME OR IN COMPETITION,

ACCEPTED BY THE L. A. W. RACING BOARD.

NAME,	DISTANCE,	TIME, H, M, S,
I. S. Johnson	100 yards	09
"	100 yards	05
"	⅛ mile	17
"	⅛ mile	12
A. A. Zimmerman	¼ mile	26
H. C. Tyler	¼ mile	29
A. A. Zimmerman	¼ mile	26
J. S. Johnson	¼ mile	28
A. A. Zimmerman	⅓ mile	35
I. S. Johnson	⅓ mile	34
"	⅓ mile	39
W. W. Windle	½ mile	56
J. S. Johnson	½ mile	59
"	½ mile	55
"	⅔ mile	1 21
"	⅔ mile	1 16
W. W. Windle	1 mile	1 56
H. C. Tyler	1 mile	2 00
W. W. Windle	3 mile	6 43

AMERICAN ROAD RECORDS IN COMPETITION.

NAME.	DISTANCE,	TIME, H, M. S.
James Willis	10 miles	27 26
W. H. Hurlburt	15 miles	43 18
"	20 miles	57 46
Frank Waller	25 miles	1 06 10
F. A. Foell	50 miles	2 32 20
J. W. Linneman	100 miles	5 48 45

W. Van Wagoner rode 25 miles in 1h, 14m, 10s, in the Martin Road Race, Buffalo, on May 27th, 1893—U. S. A. Road Record.

J. W. Stocks, the English 25-mile champion, succeeded on Monday, August 28th, 1893, in first covering 25 miles within the hour.

The first 5 miles were covered in 11m, 41s, 10 miles in 23m, 30s, 15 miles in 35m, 28s, 20 miles in 47m, 27s, 25 miles in 59m, 31s, on a Beeston Humber Safety.

U. S. A. RECORDS UP TO DATE—1894.

NAME,	DISTANCE,	TIME, H, M, S,
H. C. Tyler	¼ mile	25
George C. Smith	¼ mile	31
A. A. Zimmerman	¼ mile	30
H. C. Tyler	½ mile	1 00
George F. Taylor	¾ mile	1 41
W. C. Sanger	1 mile	2 08
A. A. Zimmerman	2 mile	4 51
W. C. Sanger	2 mile	4 31
L. D. Munger	3 mile	7 38
Frank Walker	3 mile	7 31
John S. Johnson	3 mile	7 15
L. D. Munger	4 mile	10 13
C. T. Knisley	4 mile	10 12
A. E. Lumsden	5 mile	12 36
H. C Wheeler	5 mile	12 04
J. W. Linneman	6 mile	15 15
"	7 mile	17 43
"	8 mile	20 24
L. S. Meintjes	9 mile	22 52
J. W. Linneman	10 mile	25 32
L. S. Meintjes	15 mile	38 05
"	20 mile	51 18
"	25 mile	1 04 34
"	30 mile	1 17 56
"	35 mile	1 31 02
"	40 mile	1 44 11
"	45 mile	1 57 33
"	50 mile	2 11 06

1885—	50—	safety,	W. Travers	3	15	39
1890—	50—	"	M. A. Holbein	2	38	57
1891—	50—	"	R. L. Ede	2	24	44
1890—	50—	"	T. A. Edge	5	27	38
1892—	194—	"	F. W. Shorland	12	00	00
1892—	359—	"	W. A. Holbein	24	00	00
1892—	413:1215yds,		F. W. Shorland (cuca cup race)	24	00	00
1893—	428:440yds,		F. W. Shorland (World's Record)	24	00	00

BICYCLE RECORDS OF IRELAND, 1893.

(IRISH CYCLIST.)

PATH.

MILES.	HOLDER.	H.	M.	S.	TRACK.
¼	A. A. Zimmerman,		30	4-5	Ball's Bridge
½	R. J. Mecredy	1	7	4-5	"
¾	"	1	55	2-5	"
1	J. H, Taylor	2	23	4-5	"
2	A. L. Joynt	5	10	2-5	"
3	B. B. Tuke	7	40	1-5	"
4	E. O'Callaghan	10	15	1-5	"
5	"	12	48	4-5	"

Greatest distance in 1 hour :—23 Miles 859 Yards, E. O'Callaghan, Waterford.

ROAD.

DISTANCE.	HOLDER.	TIME H.	M.	S.
20 Miles	W. L. Martin	1	2	45
25 "	J. Baird	1	14	40
30 "	H. Matthews	1	43	8
40 "	R. J. Mecredy	2	36	27
50 "	W. L. Martin	2	47	30
100 "	" "	6	15	25
183⅞ "	A. G. Joyce	12	00	00
264 "	L. Fletcher	24	00	00

(THE CYCLIST'S YEAR BOOK.)

Results of the Amateur championships of the N. C. U.

YEAR.	MILES.		NAME.	TIME. H. M. S.
1878	2	bicycle,	Hon. J. K. Falconer	6 29
1879	1	"	H. L. Cortis	2 59
1880	1	"	C. E. Liles	2 55
1881	1	"	G. Lacy Hillier	3 66
1882	1	"	F. Moore	2 47
1883	1	"	H. W. Geskell	2 55
1884	1	"	H. A. Speechly	3 30
1885	1	"	S. Sellers	2 45
1886	1	"	P. Furnival	2 46
1886	25	tricycle,	R. J. Mecredy	1 55 40
1887	5	"	" "	17 22
1887	1	bicycle.	W. A. Illston	2 45
1888	1	"	H. Synyer	2 32
1889	1	"	August Lehr	3 09
1889	1	safety,	F. T. Fletcher	3 16
1890	1	"	R. J. Mecredy	2 48
1890	1	bicycle,	F. J. Osmond	3 21
1891	1	"	J. H. Adams	2 54
1891	1	safety,	P. W. Scheltema-Beduin	3 00
1892	1	"	A. A. Zimmerman	3 57
1892	5	"	" "	20 09
1892	50	"	" "	2 37 23
1892	1	ordinary,	J. H. Adams	2 57
1893	1	safety,	W. C. Sanger	3 49

YEAR,	MILES		NAME.	TIME H. M. S.
1891	50	bicycle,	S. C. Houghton	2 45 55
1891	100	"	J. F. Walsh	6 22 15
1891	175	"	J. F. Walsh	12 00 00
1885	259	"	G. P. Mills	24 00 00
1891	312	"	J. F. Walsh	24 00 00

CANADIAN RECORDS, TO SEPT. 17, 1893.

COMPETITION.

¼	(flying)	30 2/5	C. C. Harbottle.
¼	(standing)	33 1/5	J. S. Johnson.
½	(flying)	1.05 3/5	A. A. Zimmerman.
½	(standing)	1.07 2/5	F. J. Osmond.
1	"	2.24 1/5	W. Hyslop.
2	"	5.03 2/5	A. A. Zimmerman.
3	"	7.38	W. M. Carman.
4	"	11.15	G. M. Wells.
5	"	13.03 3/5	W. Hyslop.

AGAINST TIME.

1	(mile)	2.16 4/5	J. S. Johnson.
2	"	4.50	W. A. Rhodes.
3	"	7.27	do
4	"	10.07 1/5	do
5	"	12.33 1/5	do

Champion W. M. Carman's great ride on a "New Rapid." Considering the wretched track, the cold atmosphere and the insufficient attire, we are of the opinion that it was one of the best cycling performances of the year 1893.

MILES.	CARMAN'S TIME.	PREVIOUS BEST.	RIDER.
1	2 39 3-5	2 16 4-5	J. S. Johnson.
10	27 26	28 20 2-5	W. R. Hensel.
15	41 38 4-5	44 01 3-5	D. Nasmith.
20	55 44	58 00 3-5	do.
25	1 11 13 1-5	1 13 06 3-5	do.

The distance he covered in one hour was 21 miles, 2,570½ feet. Dr. P. E. Doolittle held the watch.

At London, Sept. 1893, T. B. McCarthy of Stratford, won the 2 mile championship of Western Ontario. Mr. McCarthy is therefore the acknowledged Champion of Western Ontario, 1893.

MISCELLANEOUS.

Up to 1882 Dr. Doolittle was the acknowledged Canadian Champion.

1883,	1	mile,	ord.,	W. G. Ross,	4:17, London
"	5	"	"	" "	22:56,
1884,	1	"	"	Lavender,	3:09, Toronto
"	5	"	"	W. G. Ross,	17:14,
1885,	1	"	"	H. W. Clarke,	3:00, Woodsk
"	5	"	"	" "	16:55,
1886,	1	"	"	" "	3:09, Montral
"	5	"	"	F. Foster.	
1887,	1	"		H. P. Davies,	3:03, Brantf'd
"	5	"		F. Foster,	32:32,
1888,	1	"		" "	2.47, Bellev'le
"	5	"		" "	15:55,
1889,	1	"		E. O. Rassicoe,	3:11, St. Kits.
"	5	"		B. Brown	16:57,
1890,	1	"		W. Carman,	2:45, Ottawa
"	5	"		" "	15:13,
"	1	"	safety,	P. F. Ross,	3:07,
1891,	1	"	"	A. W. Palmer,	2:42, Hamilt'n
"	3	"	"	" " "	8:58.
"	1	"	ord.,	W. Carman,	2:42,
"	5	"	"	"	defaulted
1892,	1	"	safety,	W. Hyslop,	2:32, Kings'n
"	3	"	"	W. Carman,	8:08,
"	1	"	"	M. Wells,	1.13,
"	5	"	"	" "	13:58,

1893, ¼ to 5, W. Hyslop, ¼-½-1-3-5=35-1:10-2:33 4/5-9:08 2/5-13:41.

ROADS.

BY N. MONTEITH, B. S. A., REEVE TP. DOWNIE.

The great awakening at this time throughout the country on the subject of roads is most auspicious. Men are practically agreed that a good road is a good thing to have; but as to the best means of obtaining a good road men are not agreed. The present system of working out the road tax is far from satisfactory in the older settled portions of America, it tends toward a lack of uniformity in construction. What is needed in road commissioners is good practical judgment to first grade the road in under construction, in width in accordance with the requirements of the traffic; then the height of grade should be largely influenced by the soil, clay soil requiring a higher grade to secure their drainage. Then as to the material for the road bed, Nature has kindly supplied many localities with gravel beds of limestone and gneiss which if intelligently applied to properly graded roads will make an excellent road for ordinary rural traffic. Road masters should remember that loose cobble stones are a positive danger to horses and vehicles, the bicycle not excepted. Space will not permit going into the details of road construction; but let the road be straight and of uniform grade, remembering that a thing of beauty is a joy forever and that the public roads of a community are almost a sure indication of its civilization.

"The Cyclist's Road Guide" is an indispensable adjunct to the tourist in Canada, published by W. H. MILN, 5 Jordan Street, Toronto.

The following is a complete list of all "Centuries" passed by the Club since January 1st, 1893:—

Anglin, Dr. W. G., Kingston—1,
Atkinson, P. W., London—1,
Burnside, Thrift, Deer Park—3,
Burton, F. C., Barrie—1,
Balfour, Dr. J. D., Toronto—1,
Bickford, O. L, Toronto—1,
Brebner, John, Sarnia—4,
Ball, Wm., Blenheim—1,
Ball, A. W., Blenheim—1,
Brock, W. A., London—1,
Booth, Walter, Shelburne—1,
Crosby, A. B., Toronto—1,
Collar, G. W., Blenheim—1,
Duncan, W. J., Toronto—2,
Dewer, W. F., Milton—1,
Eaton, W. F., Toronto—1,
Fullar, A. S., Stratford,—1,
Fisher, Geo. L., St. Thomas—1,
Flemming, N., Toronto—1,
Glynn, M. E. Sarnia—10, + 11 = 21.
Green, A. H. Toronto—1,
Graydon, W. J. Streetsville—1,
Greenwood, W., Toronto—1,
Gemmell, W. M., Toronto—1,
Gibbs, G. M., Sarnia—1,
Hamilton, J. R. Collingwood—1,
Herbner, C. F., Toronto—1,
Herbner, W. J., Lee, Mass—1,
Holt, Bruce, London—1,
Jackson, J. H., Georgetown—3,
Jones, Chas. L., Toronto—2,
Lloyd, W. E., Owen Sound—4.
Laschinger, A., Sarnia—4,
Lovejoy, Wm. H., Montreal—1,
Lillie, L. R., Lodi, California—7,
Millar, E. B., Owen Sound—13,

Minshall, Philip, St. Thomas—1,
Manning, E., Toronto—1,
McLeod, Angus, Sarnia—1,
McDowall, R., Owen Sound—3,
Norman, G. E., Shedden—1,
Rogers, Alf., Deer Park—1,
Robinson, J. R., Toronto—1,
Robinson, Fred C., Toronto—1,
Robertson, Dr. W. N., Stratford—2,
Reid, George R., Toronto—2,
Rothwell, H. L., Sarnia—1,
Shaw, A. B., Toronto—1.
Shannon, W. J., Watford—1,
Smith, H. B., Toronto—1,
Simpson, A. A., Montreal—1,
Shand, Clifford J., Windsor, N. S—1,
Taylor, F. B., Waterford—1,
Thompson, A. R., Toronto—1,
Wallace, E. S., Collingwing—1,
Whitaker, George A., Toronto—1,
Whatmough, F. J., Toronto—2,

At the beginning of the season, Messrs. Davis Bros., jewellers, of Toronto, offered a handsome medal to the Club, to be presented to the rider who should make the greatest number of "centuries" during the season ending December 31st, 1893. Following is the score of the five highest at this date, (November 7.)

E. Bruce Millar, Owen Sound	13
M. E. Glynn, Sarnia	10
L. R. Lillie, Lodi, California	7
W. E. Lloyd, Owen Sound	4
Jno. Brebner, Sarnia	4

F. J. Pope, M. A., Science Master S. C. I., rode 14 centuries during 1893,—on a Humber Road Racer. Unfortunately Mr. Pope was not a member of the Century Road Club.

Shortly after Nov. 7, we were informed that Mr. Millar was Canadian Centurion Champion, 1893.

It is now (Jan. 1, 1894,) manifest that Mr. M. E. Glynn of Sarnia, began to score in earnest and +11 more to his credit. Therefore M. E. Glynn, Sarnia, is the Canadian Centurion Champion of 1893.—No. 21.

THE DON BRIDGE, TORONTO, TO WHITBY,

ROAD RECORDS.

Year.	Record.	Holder.
1885	2 h, 45m	G. H. Orr,
1886	2 h, 30m	C. F. Lavender,
1887	2 h, 25m	F. J. Brimer,
1888	2 h, 17m	J. H. Gerrie,
1890	2 h, 11m	D. Nasmith,
1892	1 h, 48m	D. Nasmith,
1892	1 h, 44m	C. McQuillan, J. F. Deeks.

THE 100 MILE ROAD RECORD.

(CYCLING.)

On June the 2nd, 1892, G. F. Stephenson rode from Toronto to Trenton, a full hundred miles with some to spare, in 8 hours 8 minutes, once more securing the record. This was considered good time for the Trenton road, and has not since been beaten.

D. Nasmith's (reported) 100 miles ride on Rosedale track, 1892.

MILES	TIME	MILES	TIME
10	0 28 26	60	2 53 31
20	0 56 9	70	3 26 8
30	1 25 55	80	3 59 26
40	1 51 40	90	4 33 25
50	2 22 22	100	5 04 18

The first Queen City Handicap Road Race June 15th, 1892—an unqualified success under the management of Mr. John H. Gerrie.

A. W. Palmer, Hamilton, won time 1 20.—Distance 25 miles. 61 entries, 45 started.

	H, M. S.
Palmer	1 20 05
Doll	1 20 15
McQuillan	1 20 20
Parr	1 22 20
Riggs	1 22 45
Robertson	1 25 40
Gibbons	1 26 05
Harvey	1 27 00
Jaffray	1 28 15
Lowe	1 29 35
Dunn	1 30 50
Deeks	1 32 45

(CANADIAN WHEELMAN.)

C. W. A. Road Race—Kingston to Odessa and return—1892.

The day was an ideal one for road race, the sky was cloudless, the temperature hot and the wind only a gentle breeze quartering the course, (a little less than) 25 miles.

ORDER OF FINISH.

	H.	M.	S.
Carman, Toronto	1	10	6
Palmer, Hamilton	1	10	30
Smith, Torontos	1	10	45
Nasmith, Torontos	1	11	00
Hyslop, Torontos	1	11	30
Doll, Wanderers	1	14	52
Wells, Wanderers	1	15	21
McQuillan, Wanderers	1	15	22
Nash, Wanderers	1	15	24
Jeffray, Wanderers	1	16	40
McClelland, Torontos	1	17	25
Gauld, Hamiltons	1	17	50
Sliter, Kingstons	1	19	00

The first Annual Bowman Road Race, Hamilton, May 27th, 1893—15 miles. (Managed by the enterprising Mr. J. W. Bowman.)

	M.	S.
1 C. McQuillan, Wanderers	54	32
2 J. F. Deeks, Wanderers	52	53
3 W. R. Hensal, R. C., Toronto	51	25
4 Harry Tolton, Galt	54	16
5 L. D. Robertson, Athenæums	51	46
6 McIlroy, Hamilton	58	01
7 W. Hyslop, Toronto	51	17
8 J. Bain, Ramblers	55	21
9 S. Bully, Toronto	55	01
10 W. J. Young, Athenæums	58	59
11 S. Aikens, Hamilton	56	30
12 M. Campbell, Wonderers	59	47
13 F. W. Young, Wanderers	60	38
14 W. Lee, Toronto	56	38
15 A. W. Palmer, Hamilton	52	57

The Athenæums Road Race—20 miles—October 16th, 1893.

The following were the best times made:

	H.	M.	S.
1 W. M. Carman, A, C, C.	1	00	20
2 W. Hensel, R, C, B, C.	1	00	41
3 J. F. Deeks, W, B, C	1	02	48
4 W. Hyslop, T. B, C,	1	03	17
5 C. McQuillan, W, B, C	1	04	32
6 C. C. Harbottle, T, B, C,	1	04	40
7 T. W. Carlyle, A, C, C	1	04	44

T. B. C. HANDICAP SERIES—1893.

(CYCLING.)

Following is the score:

Riders	1st Race	2nd Race	3rd Race	Total
1 M. R. Gooderham	12	11	12	35
2 H. Greenwood	9	12	11	32
3 A. Burgoyne	8	10	10	28
4 W. H. Miln	6	9	*	15
5 J. Msln	11	†	*	11
6 W. J. Fraser	10	*	*	10
7 C. O. Brimer	‡	8	*	8
8 S. Bully	7	*	*	7
9 R. Brimer	*	7	*	7
10 W. Robins	*	6	*	6
11 H. Bible	†	5	*	5
12 W. G. McClelland	5	*	*	5
13 S. J, Schulte	*	4	*	4
14 F. H. McDonald	4	*	*	4

* Failed to start. † Fell. ‡ Did not finish.

Best time of series, 32 minutes, made by M. R. Gooderham.

The following are the best times of the interesting series of Road Races held by the S. B. C. during 1891.

All rode ordinaries, solid tires, except Robertson who rode a 52 inch eagle, and Litt and Hyslop who rode safeties.

10 miles, with a turn, on the famous St. Marys Road.

	HANDICAP,	M, S,
R. R. McFarlane	S	37 29
T. B. McCarthy	3½	38 45
J. H. Kenner	4½	39 11
J. Hyslop	5	39 57
E. Litt	4½	41 31
W. N. Robertson	S	35 30
J. Pequegnat	7½	44 31

H. G. Shaver and W. Jeffrey, Timers.

THE GREAT CANADIAN RELAY RACE.

Distance 205 miles. Time, 14.20—1891.

(DAILY MAIL.)

Dist.		Time.	Couriers.
	Hamilton	6:00	
5	Appleby	6:30	Griffith and James,
12	Port Credit	7:40	Gauld and Powis,
13	Mail Office, Tor.	8:45	Palmer and Skerritt,
14	Norway	8:55	Foster and Brown,
11	Highland Creek.	9:50	Hyslop and McBride,
15	Whitby	10:44	McClelland,
13	Bowmanville	11:50	Doherty and Kent,
22	Port Hope	1:21	Miln and Wood,
31	Brighton	3:55	Lennox and Lowes,
22	Belleville	5:12	Nash and Roy,
25	Napanee	6:45	Smith and Notwell,
22	Kingston	8:20	Nasmith and Sliter.

The above was about the first great bicycle Relay Race in history and was promoted and managed by

that enthusiastic cyclist John H. Gerrie, of Toronto, who was also the organizer of the Century Road Club of Canada, of the first Canadian National Road Race, (Queen City), and some years ago a noted racer on road and track, ex-Captain of the Wanderers, and last winner of the Canadian Tricycle Championship. (G. Mothersill, Ottawa, and F. Foster, Toronto, also earned championship honors on the tricycle.)

Mr. Gerrie has an inherent athletic physique with ribbon-shaped muscles, therefore naturally an electric pedaller, than whom few, if any, have done more to foster the interests of cycling in Ontario.

He is best known probable by his reliable articles on cycling affairs in the daily and weekly press, his writings over the pen name of "Jan Geri" being most notable.

Thomas Lalor, the well known (Wanderer) cycle reconstructor was the first man in Canada to own and ride a rear driven safety "Lalor's Hearse."

A wise original suggestion.—C. W. A. Timekeeper G. H. Orr, in the current number of the Canadian Wheelman, wisely suggests that riders in track races be compelled to wear a distinctive suit, or color of their own in place of the numbering system now in vogue. Certificates of colors to be filed with the Racing Board to prevent duplication.

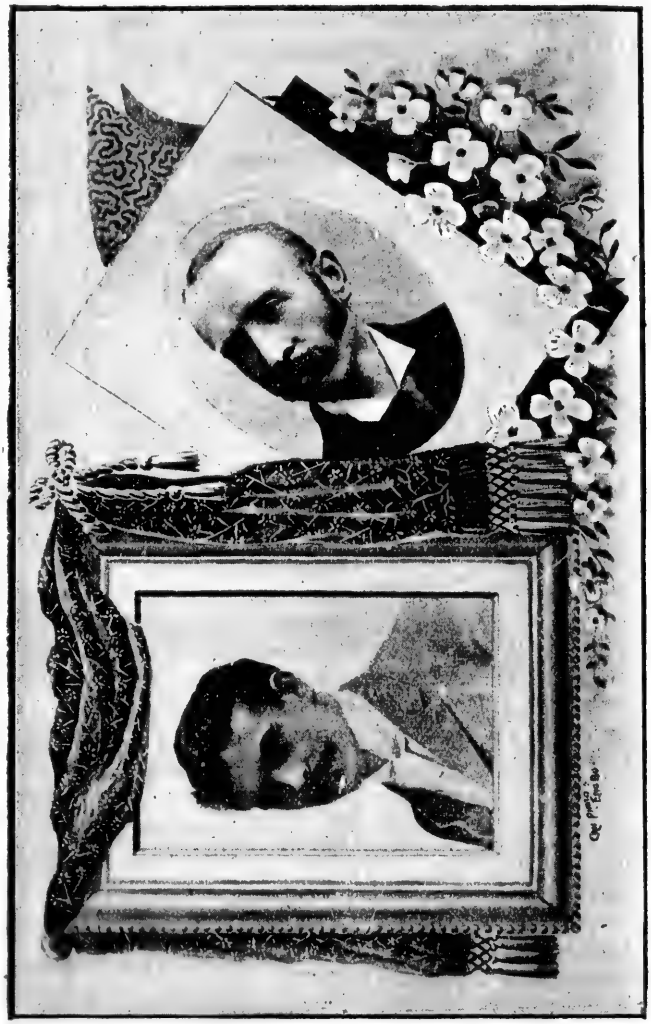
We have to acknowledge our indebtedness to Mr. Hal. B. Donly, editor of Canadian Wheelman, (official organ C. W. A.) for the MSS. of Canadian Championships, Records, names of Canadian Riders, Classified List of Canadian Riders, Track measurements, etc. He kindly favored us with it at no little inconvenience to himself.

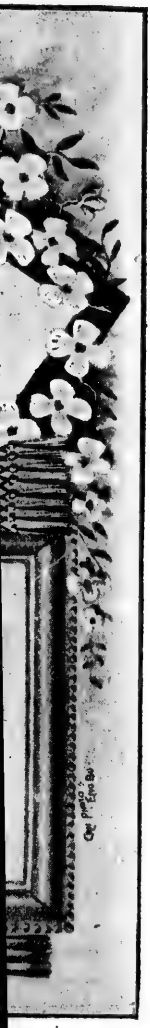
LIST OF RIDERS AND NUMBER OF FIRST PLACES WON BY EACH DURING SEASON 1893.

NAME.	RESIDENCE.	NO. OF 1ST PLACES.
Ardagh, A. W.	Montreal	1
Aikins, S	Hamilton	1
Bald, E. C	Buffalo	1
Baldwin, G. M	Seaforth	1
Bender, W. G	Toronto	1
Birthel, C	Detroit	3
Blaney, R. O	Simcoe	6
Bourne, A	Wallaceburg	4
Brand, F	Beamsville	1
Brock, W	London	1
Browning, W. E	Exeter	1
Broomfield	Brantford	1
Burton, F	Barrie,	1
Carman, W. M	Toronto	2
Carman, H	Morrisburg	1
Corey, B. P	Petrolia	1
Cummings, B. E	Sterling	4
Danford, P. K	Montreal	1
Daville, H. L	Aurora	2
Deeks, J. F	Toronto	7
Dirnberger, M. F	Buffalo	1
Devine, W	St. Thomas	3
Deyell, G	"	1
Farrell, P	Woodstock	1
Fennemore, M	Picton	3
Gibbon, H	Toronto	1
Gibbons, S. H	"	1
Gibson, W	Beamsville	1
Glover, B. W	London	1
Gooderham, M. R	Toronto	1
Gordon, F. S.	Hamilton	1

NAME.	RESIDENCE.	NO. OF 1ST PLACES.
Gullett, F. B	Toronto	2
Hanes, W	Morrisburg	1
Harbottle, C. C	Toronto	14
Hardy, W. G	Brantford	1
Harvey, T.	Ottawa	1
Harvey, G.	"	3
Hensall, W. R	Toronto	4
Hitchcock, F	Sarnia	1
Hockaday, J	Detroit	1
Holborn, W	New Market	1
Hurst, W. H	Alliston	2
Hyslop, A	Stratford	1
Hyslop, W.	Toronto	28
Johnson, J. S	Syracuse	7
Laing, J	Brantford	1
Little, G	New Market	1
Livingstone, J. W	Seaforth	1
Longford, J. W	Goderich	1
Louson, D. S.	Montreal	1
Lutz, W. A	Buffalo	1
Lyman, C. P	Montreal	2
Lyman, F. D	"	1
Lyon, A. M	Toronto	1
Mackie, W	Beamsville	1
Manville, C	London	1
Martineau, A	Montreal	2
Mann, F. W	Toronto	1
McCauce, W	St. Thomas	1
McCarthy, T. B	Stratford	7
McCauley, W	Beamsville	3
McClelland, W. G	Toronto	1
McCray, A	Alliston	1
McCray, R	"	1
McDowell, R	Owen Sound	1
McFarlane, R. R	Stratford	1
McFarland, J. S	Buffalo	1
McIlroy, R	Hamilton	1
McKae, E.	Kingston	1
McKellar, H. D	Toronto	4

NAME	RESIDENCE.	NO. OF 1ST PLACES.
McLaren, Dr.	Barrie	3
McLean, W.	Seaforth	1
Miller, R.	Hamilton	1
Miln, J.	Toronto	1
Minchall, P.	St. Thomas	1
Mitchellton, —	London	1
Nichols, W.	Hamilton	1
Patterson, P. P.	Detroit	1
Phillips, H.	Brantford	1
Proctor, T.	Toronto	1
Reid, A. W.	Windsor	1
Reid, J. A.	Aurora	3
Reid, W.	"	1
Robertson, L. D.	Toronto	8
Robertson W. N.	Stratford	1
Rhodes, W. A.	Boston	2
Rowen, L.	Guelph	1
Sackett, N. B.	Marine City	1
Sapt, H. P.	" "	3
Schmidt, A. E.	Waterloo	4
Schultz, C. A.	Essex	1
Sherriff, E. W.	Picton	2
Skerrett, F. H.	Hamilton	2
Sliter, E. O.	Kingston	3
Smith, E. J. P.	Toronto	5
Smith, G.	Barrie	1
Smith, T.	Orillia	1
Steele, J.	Barrie	1
Stellings, G. E.	Montreal	3
Steuber, M.	Detroit	3
Tolton, H.	Galt	5
Wells, G. M.	Toronto	1
Westbrook, E. H.	Marine City	2
White, C.	London	1
White, J. F.	"	3
Willets, G. W.	Brantford	1
Wright, J.	Picton	1
Young, F. W.		8





W. H. MILN, FRED BRYERS,

The Publisher and the Editor of "CYCLING," Canadas' favorite Wheeling Journal.

On the opposite page will be found a very fine plate of the publisher of "Cycling," with the editor on a side dish.

Mr. W. H. Miln, is a native of Glasgow, Scotland, but has lived long enough in Canada to be thoroughly Canadian in his ways.

About six years ago he commenced riding on the "ordinary," which style of wheel he affected, until the advent of the pneumatic tire, three years ago, left him with a "rational" on his hands. He, however, now uses the universal safety, and is a good rider, having finished well up in the great "Queen City" and "National" road races of 1893.

Personally, he is bright, active and popular, and, to his business ability and pleasant manner, are due, in a great measure, the success of his flourishing paper "Cycling."

Mr. Fred. T. Bryers, editor of "Cycling" is a native Canadian, who was born in the Province of Quebec, but has passed most of his days in western Ontario.

He had little fancy for the old high style of cycle but on the evolution of the safety he at once perceived its advantages.

The exhiliarating effect of cycle locomotion increased into the stage of enthusiasm, and ever since he has practically demonstrated to the world the utility of the silent steed in every day business, as well as in holiday touring expeditions.

He manifests an inherent calm, far-seeing and cautious disposition, one who can magnetize his fellow-cyclists and readers more by his modest in-

dependent, instructive, orthodox selections and statements than by the extreme fiery orations or personal illusions by which so many writers tend to create factions or dissentions in associations or parties. Nevertheless, when war-clouds do appear, he always rises to the occasion.

"Cycling" though young in years, is one of the best illustrated and one of the most popular wheelmen's journals published in America; chiefly because it gives reliable news that is new, and of interest to Ontarionians.

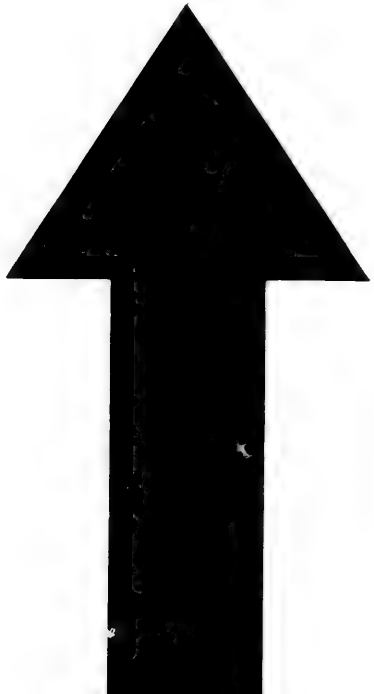
"The Cyclist's Road Guide," is an indispensable adjunct to the tourist in Canada, published by W. H. Miln, 5 Jordan Street, Toronto, Ont.

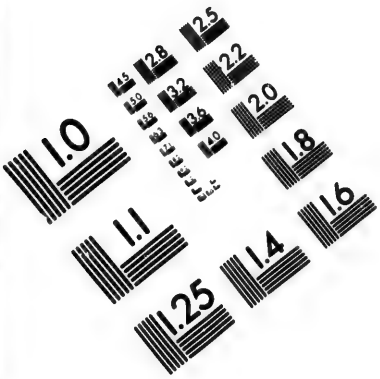
CANADIAN RIDERS' CLASSIFIED LIST TO JAN. 1st, 1894

CANADIAN RIDERS' CLASSIFIED LIST TO JAN. 1ST, 1894.

NAME.	RESIDENCE.	¼	½	1	2	3	5
Aikens, S.	Hamilton	..	..	..	.. 6 10	..	..
Baldwin, G. M.	Seaforth	..	..	2 53	..	..	..
Blaney, R. O	Simcoe	..	..	2 45 1/5	.. 7 19	..	..
Brand, F	Beamsville	..	1 39	..	..	..	..
Bourne, A	Wallaceburg	..	..	2 55½	.. 6 14½	..	..
Brock, W	London	..	..	..	.. 6 11 3/5	..	..
Broomfield, R A.	Brantford	..	..	2 43 2/5	.	..	..
Browning, W. E.	Exeter	..	..	..	. 5 49 1/5	..	..
Burton, F	Barrie	..	..	3 05	..	..	..
Carman, W. M	Toronto	..	1 15	.. 2 40	.. 5 35	.. 7 38	.. 13 47 1/5
Corey, B. P	Petrolia	..	..	..	.. 5 46	..	..
Cummings, B. E.	Campbellford	35 ..	1 25	..	..	...	... 15 14
Daville, H. L	Aurora	...	...	2 54	...	...	...
Deeks, J. F	Toronto	...	1 15 2/5	... 2 40	... 5 46	...	... 15 37 2/5
Devine, W	St. Thomas	...	...	2 48	... 6 32	...	...
Farrell, P	Woodstock	...	...	3 10	...	...	...
Finnemore, M	Picton	...	1 23	... 3 04	...	...	...







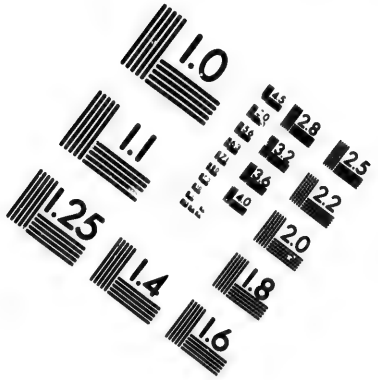
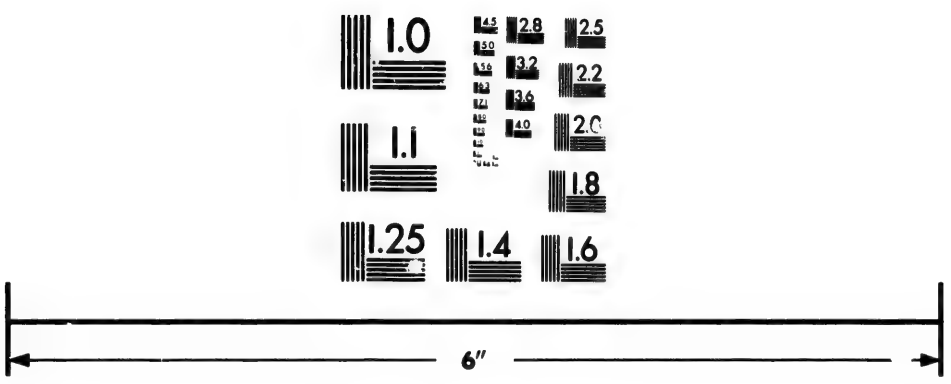
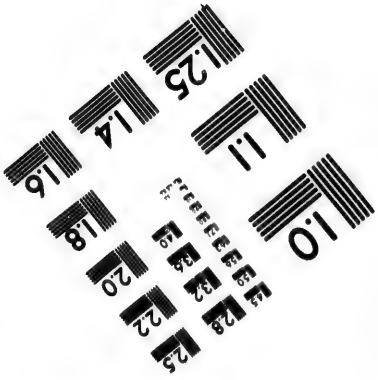


IMAGE EVALUATION TEST TARGET (MT-3)







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NAME.	RESIDENCE.	¼	½	1	2	3	5
Gibbins, S. H.	Toronto	...	...	...	5 45 4/5	...	...
Gibson, W	Beamsville	...	...	2 53	...	...	...
Gordon, F. S	Hamilton	...	...	2 33	...	...	...
Gullett, F. B	Toronto	...	..	2 45 1/5	...	...	...
Halborn, W.	New Market	...	...	6 09	...	...	...
Harbottle, C. C	Toronto	...	1 15 3/5	2 33 3/5	5 06	...	...
Hardy, M. G	Brantford	...	...	3 17½	...	...	...
Hanes, W	Morrisburg	..	...	..	7 10 2/5	...	...
Harvey, G	Ottawa	...	...	...	5 46	...	...
Harvey, T	Ottawa	...	...	...	5 44 3/5	...	...
Hensall, W. R	Toronto	...	...	2 38	5 45 3/5	9 10	.
Hurst, W. H	Alliston	...	...	3 22	...	...	...
Hyslop, W	Toronto	34 4/5	1 14 3/5	2 28 4/5	5 17	8 52	13 03 3/5
Livingstone, J. W.	Seaforth	...	...	...	...	10 28	...
Longford, J. W	Goderich	...	...	3 02	...	...	...
Louson, D. S	Montreal	...	...	2 50	..	..	..
Mackie, W	Beamsville	..	..	3 18½	..	..	..
Manville, C	St. Thomas	..	..	2 57½	.. 6 11	..	.. 14 55 4/5
McCauce, W.	"	..	..	3 07½	.	..	..
McCarthy, T. B.	Stratford	..	1 14 1/5	2 37 4/5	5 28 2/5	..	..

NAME.	RESIDENCE.	¼	½	1	2	3	5
Mackie, W	Beamsville	..	..	3 18½	..	..	..
Manville, C	St. Thomas	..	..	2 57½	.. 6 11	..	.. 14 55 4/5
McCauce, W	"	..	..	3 07½	.	..	..
McCarthy, T. B.	Stratford	..	1 14 1/5	2 37 4/5	.. 5 28 2/5	..	..
McCauley, W	Beamsville	39¾	1 20¾	..	..	..	.. 16 30
McClelland, W. G.	Toronto	..	..	..	.. 6 15	.. 9 08 2/5	.. 16 30
McCray, A	Alliston	..	1 35¼	..	..	..	..
McCray, R	"	..	1 42	..	..	..	..
McDowell, R	Owen Sound	..	..	3 06 4/5	..	.	...
McFarlane, R. R.	Stratford	..	..	..	.. 5 45	..	..
McKellar, W. D.	Toronto	..	..	2 46 4/5	..	..	..
McLaren, Dr	Barrie	..	..	3 01½	..	..	..
Minchall,—	St. Thomas	..	1 20	..	..	..	..
Mitchelton,—	London	..	..	3 26	..	..	..
Nichols, W	Hamilton	34 2/5	..	..	..	..	..
Reid, A. W	Windsor		..		.. 6 15 2/5	..	..
Reid, J. A	Aurora	..	..	2 51	...	..	..
Reid, W	"	..	..		.. 8 29 2/5	..	..
Robertson, L. D.	Toronto	..	1 13 2/5	2 30 2/5	.. 5 18	..	.. 14 35
Robertson, W. N.	Stratford	..	..		.. 5 43	..	..
Schmidt, A. E	Waterloo	..	..	2 50 3/5	..	..	.. 15 38
Sherriff, E. W	Picton	..	1 26½	...	...	...	..
Skerrett, F. H	Hamilton	..	1 15	..	.. 6 20	.. 9 45	..
Sliter, E. O	Kingston	37 1/5	1 15 2/5	..	. 5 54½	..	..

NAME.	RESIDENCE.	¼	½	1	2	3	5
Smith, E. J. P	Toronto	..	1 15	2 41 2/5	5 39	8 45	..
Smith, George	Barrie	..	..	..	6 51	...	...
Smith, T	Orillia	...	...	...	6 00	...	...
Steele, J	Barrie	...	..	...	...	...	.. 17 03¼
Stillings, G. E	Montreal	...	1 17	...	6 02 2/5	...	...
Tolton, H	Galt	...	1 20	2 44 4/5	5 45	...	...
Wells, G. M	Toronto	...	1 14 1/5	...	...	...	...
White, C.	London	...	...	...	...	9 25	...
White, J. F	London	...	...	2 45	6 22 2/5	...	..
Willitts, G. W	Brantford	...	..	3 09 2/5	...	...	...
Wright, J	Picton	...	1 33	...	...	...	...
Young, F. W	Toronto	...	1 14	2 48 2/5	5 52	...	...

TRACK MEASUREMENTS FILED WITH RACING BOARD C. W. A., TO JAN. 1, 1894

TRACK MEASUREMENTS FILED WITH RACING BOARD C. W. A., TO JAN. 1, 1894

PLACE.	NAME OF TRACK.	MATERIAL.	MEASUREM'T	SIZE	Over or Short in 1 Mile.
Alliston	Alliston Driving Park	Clay	2,368 feet	½	s. 181 y. 1ft.
Barrie	Agricultural Park Track	Clay	1,712 feet	⅓	s. 48 yds.
Beamsville	Driving Park	Clay	2,643 feet	½	o. 6 ft.
Brantford	Agricultural Park	Clay	2,636 ft. 8 in.	½	s. 6 ft. 8 in.
Desoronto	Desoronto Driving Club	Clay	2,640 ft.	½	even.
Elmira	Woolwich Tp. Ag'l. Society	Clay	1,769 ft.	⅓	o. 9 yds.
Galt	Galt Driving Park	Clay		⅓	s. 120 yds.
Goderich	Goderich half-mile Track	Clay	39 ch. 76 lk.	½	s. 33 ft. 6in.
Guelph	Exhibition Park	Clay and Loam	2,653 ft.	½	o. 26 ft.
Hamilton	Hamilton Bicycle Track Co.	Asphalt	1,323 ft.	¼	o. 4 yds.
Hamilton	Hamilton James Street	Clay	2,530 ft. 6 in.	½	s. 19 ft.
Kingston	Kingston A. A. A.	Wood	1,320 ft.	¼	even.
London	Queen's Park	Clay	2,622 ft. 2 in.	½	s. 35 ft. 8 in.
Montreal	M. A. A. A.	Cinders	1,759 ft. 9 in.	⅓	even.
Morrisburg	Dundas City Ag'l. Society	Clay	2,591 ft. 4 in.	½	s. 97 ft. 4 in.
New Market	Exhibition track	Clay	2,352 ft.	½	s. 192 yds.

PLACE.	NAME OF TRACK.	MATERIAL.	MEASUREM'T.	SIZE	Over or Short in 1 Mile.
Ottawa	Metropolitan Grounds	Cinders	1,325 ft	¼	o. 20 ft.
Owen Sound	Owen Sound	Clay	2,631 ft	½	s. 4 ft.
Picton	Prince Edward Ag'l. Track	Clay	2,646 ft	½	o. 12 ft.
Sarnia	Sarnia	Cinders and Salt	1,760 ft	⅓	even.
Schomberg	King Agricultural Track	Clay	1,738 yds	1	s. 22 yds.
Seaforth	Topslies Track		162rds. 11 1/2.	½	o. 89 ft.
Sombra	Sombra Trotting Association	Clay	2,151 ft	½	s. 326 yds.
St Catherines	Fairvale Park	Clay	2,736 ft. 6 in.	½	s. 19 ft
St. Thomas	Turf Club Track	Clay	2,630 ft	½	s. 19 ft. 6 in.
Stratford	Exhibition Track	Clay	2,646 ft. 5 in.	½	o. 13 ft.
(Stratford	Stratford Athletic Ass'n. Park	Clay and cinders	1,760 ft	1/3	even.)
Toronto	Rosedale	Clay and Gravel	1,546 ft.	1/3	s. 214 yds.
Toronto	Exhibition Track	Clay	2,636ft. 10½in.	1/2	s 6 ft. 3 in.
Toronto	Woodbine	Clay	5,276ft. 9½in.	1	s. 3 ft.
Wallaceburg	Fair Grounds		1,185 ft.	¼	s 146 y. 2 ft.
Waterloo	Waterloo Park	Clay and Gravel	1,320 ft	¼	even.
Windsor	Windsor Driving Park	Clay	2,631 ft. 6 in.	1/2	s. 17 ft.

RECORDS.

We contend that the present system of obtaining a rider's capacity by allowing him to follow some kind of fast moving contrivance is not the test of a man's ability at all.

It may be some test of the capabilities of his lower limbs, but this never, in our opinion, constitutes either a man or an athlete.

A rider, according to the present system, without a head, so to say, might, with an excellent pacing machine before him, make phenomenal records. It is very well to know what can be done in that way, as a sort of animo-chemical-experiment, elsewise it is preposterously absurd.

We fail to see any great honor to the rider, or attractions to the public in this kind of performance.

But the rider that can go from the tape unaided in any way whatever save, of course his cycle; and use his brain to guage the pace, and his limbs to propel, this and this only, in our mind, is the true test of an athlete's physico-mental-talent.

If one such event was on the programme at each meet, we are quite sure the gate receipts would be increased. And every rider in Canada would have a fair chance under the C. W. A. official timers to make new records.

With the present system only those who can command those costly pace-making men and constructions can ever hope to accomplish record marks.

To make the sport popular and a success the C. W. A. should make it (as we believe they have always tried to make it,) fair play to all—favors to none.

It is said that the largest room in the world is the room for improvement.

Wallaceburg..Fair Grounds .....1,185 ft. .....¼...s 146 y. 2 ft.
Waterloo ....Waterloo Park.....Clay and Gravel ..1,320 ft..... ¼....even.
Windsor ....Windsor Driving Park .....Clay ..... .2,631 ft. 6in..1/2...s. 17 ft.

All new measures are not perfect, neither are all old ones.

Canada's fastest cyclers have never made their best marks under the present irrational system of record making, for they have not had the contrivances or men necessary for drawing them out.



D. H. LEWIS, NEW YORK.

EDITOR AMERICAN WHEELMAN.

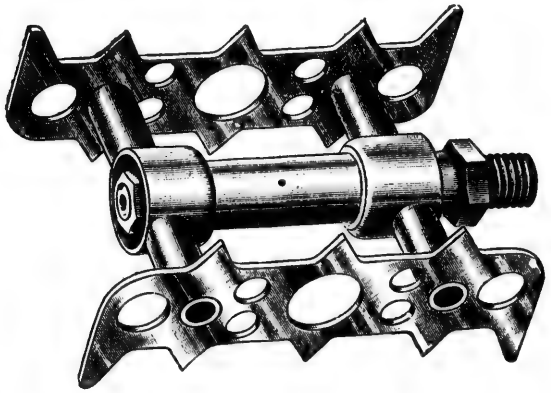
Since the days of the famous Fred Foster and the ordinary high cycle, the Canadian championship events have not been at all well contested, being in almost every case a foregone conclusion. We always thought they were easy within our grasp, had we but a cycle track and a light wheel, but alas! the medical practitioner having many patients who have a mortgage on his services cannot obtain the

time necessary to prepare for such feats. Irregular sleep and irregular diet unfit the strongest men.

There are many riders in Canada that have better speed abilities than those now at the top of the hill, yet this profiteth them nothing without a track, rational light wheel and training.

The athlete only that does give attention and time to training deserves to win.

It is to be hoped that greater quality and quantity in years to come will contest these events and interest the public. Pleasure-seekers do not care to see championship contests which are tame, they go away feeling that they have not received a just equivalent for their time and money. It is very interesting indeed to see men of inherent ability—fit-ride.



The new union Rat Trap Pedal, with detachable rubber foot pieces, original, light, strong, simple, no clamp nut, used by Windle, Tyler, Sanger, and Zimmerman. (Those that argue a rider's legs are spread by sitting on a cycle saddle, overlook the fact that a good one will not force them apart. We will give $50 more for a tread 2 inches, other parts being equal, than for a tread 4 inches.—WRITER.) Brooks, Sager, Karr study nature,—Saddle should fit rider, not rider saddle.

CAUSE OF FAILURE.

What are the most common causes of failure of athletes to win honors?

BATH.

Omission, or injudicious use of the bath. It keeps the skin active, thus relieving the lungs and kidneys, and invigorates the nervous system. A rider without capable nerve is like a cartridge loaded without metal.

COLORS AND NUMBERS.

By always wearing colors and numbers in racing events, the rider will find it much easier to prove his position in close finishes, besides his admirers can the better keep him in view during the event.

COURAGE.

The chicken-hearted man or the pseudo-sportsman who cannot get up in a race unless he imagines he is going to win, it is needless to say, don't win. Without a previous clear conception in the mind in method, execution will be incomplete.

FOOD.

Improper, or improperly cooked food too hastily masticated.

HASTE.

Having an idea that fast riding and much of it is good training, whereas the very opposite obtains—by this process muscle will deteriorate, instead of increasing in quality and quantity, e. g., exercising a healthy muscle moderately for four hours will develope it, again, if the same work be done by that muscle in half an hour, it will injure it. It requires many (5 to 20) years to attain that very highest

state of development which the individual is capable of without injury to his system.

"All things come round to him who will but wait."
—Longfellow.

IDLENESS.

Man is so constituted that he cannot maintain that highest state of physical vigor without a due amount of physico-mental culture and this must be taken every day—better three times daily.

Man cannot sleep enough in one week to satisfy the bodily wants for a month, nor can he develop athletic muscles by long relaxation.

Think for yourself. To allow another to think out your destiny is unmanly and lazy. We have failed to find any proviso for idleness in God's law, henceforth, "In the sweat of thy face thou shalt eat bread."

Be independent, generous, brave; your father such example gave, and think and fear.

IDIOCRASY.

Observe the difference in physical conformation between the greyhound and the pug dog.

An athlete may be a champion cycler and yet only a fifth rate swimmer, and vice-versa.

Capable heart and elastic blood vessels are the primary essentials of a cycle racer. Where the curling fibres of elastic tissue are wanting, vibrations and concussions are apt to pass into shock.

We have found by experimenting with the sphygmogragh on a cycler, in about half fit condition, that the heart beat rose from the natural 72 (Foster) to over 175 beats per minute, with a sudden fall to under 105 on ceasing the exertion, and by great effort too long continued that the beats would intermit.

The circulatory apparatus, then, must have elasticity to withstand these fluctuations and enormous pressure.

These, with action, stamina, health, and the physico-mento-moral effect acquired by proper training are, to say the least, desirable accomplishments towards attaining honors on the path.



W. J. MORGAN, NEW YORK.

EDITOR AMERICAN WHEELMAN.

IRREGULARITY.

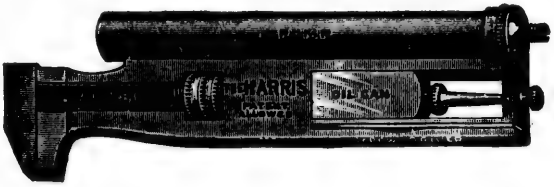
Exercise should be taken at the same hour daily (Sabbath only excepted.)

RUBBING.

Inefficient electrifying rubbing by the clean bare, healthy hands of a trainer having a superabundance of animal magnetism.

SLEEP.

Sleeping at improper hours. Day was made for work ; night was made for rest. Indulging too late in the morning. RISE EARLY. If more sleep is required retire sooner, say 6 p. m., or sun-set if necessary. To habitually sleep late in the morning is as sinful against the body as it is to build an opera house without a foundation—one day—collapse. The athlete will renew vigor speedily by reclining with the head of his bed turned towards the north, having the electric currents of the body and the earth parallel.



THE HARRIS COMBINATION WRENCH.

STIMULANTS.

Robust cyclers do not require them. Many have been injured by them. Feeble and aged persons are, generally saying, strengthened by a rational use of them.

TOBACCO.

Tobacco spoils the appetite and digestion and unstrings the nerves and irritates the heart.

TRAINING.

Improper training, or training one's self.

Finally, having attained sound training and athletic build for some contest, athletes should, of all things, avoid falling suddenly back from strict rules of training into the wanton luxuries of existence—

passing rapidly from the lean and hungry look of Cassius into that of the sleek-headed men, and them that sleep o'nights—a transition that undoes all that training has effected, and lets down the vital clock, well wound up and strong, into a machine with a damaged spring, or with works suddenly loaded with devitilized rust and dust.

VENERY.

Athletes cannot bear these iudulgences even the lustful mental without positive injury. Many of the best of men have allowed world's honors to pass from their grasp by this cause.

WORRY.

Worry exhausts the nervous system. Nerves are the batteries that drive the muscles or the engines that "push and pull the coaches.

Improper or impure habits of life shorten one's career on earth from 25 to 75 per cent., and creates darkness and skepticism where sunshine and real happiness should predominate. With good habits of life a cycler should be abls to keep his best pace until at least fifty years of age. What is more to be wished for by man, woman or child than "mens sana in corpore sano" (Horace.)

Cycling—It assuages pain,
Cures all disease, and gives again
To age the swift delights of youth.
—Longfellow.

AN OPPORTUNITY.

Need is the primo-genitureship of inventive genius.

The need is felt among Canadian Wheelmen for some source of protection for their wheels against fire and theft.

We are of the opinion that a joint stock company (limited,) could be formed by cyclers who are want-

ing to invest surplus cash, or by a private individual, upon a basis that would yield them a handsome dividend, and on the other hand protect the cycle owner at a very small cost.

Doubtless there is an opportunity in this Canadian field for a capable man, by judicious manipulations, to build up a profitable business.

As regards the rider's own risk : we advise every wheelman to take out an accident policy in one or other of the reliable Canadian Accident companies, viz., Canada Accident, Manufacturer's Accident.

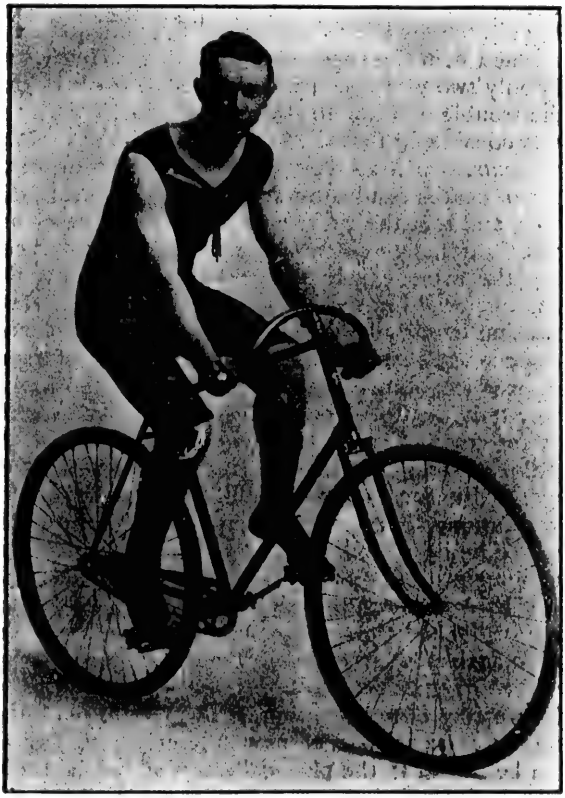
Western Clubs or riders will get special rates from Ald. John O'Donoghue, of Stratford, who is the District Manager of the latter company, and who always fosters the interests of wheelmen.

ATHLETICS.

An athlete should exercise in such a way as to devote all his efforts to strengthening one part, going thence to another, and so on, is in much the same condition that a factory would be whose engines were calculated to run only a few machines at a time. In case it should be necessary to use all the machines it would be found that the engines could not develop force enough, and that the amount of work done would be limited to their capacity. Therefore, a sufficient number of muscles should be called into action at one time to stimulate the action of the heart and lungs and increase the circulation and respiration. What is commonly called endurance or staying power depends not so much upon the strength and size of the muscles as upon the ability of the heart and lungs to eliminate waste material and keep up a fresh supply of oxygenated blood. The possibility of injury following the practice of violent physical exercise must always be borne in mind. Perhaps

the most alarming result of overtraining or over-exertion is its supposed effect upon the vital organs. There is a prevalent opinion that men who perform athletic exercise in some way weaken their hearts and lungs, rendering them less likely to withstand a severe strain from accident or disease. No physician who has had any experience in examining men who make violent physicial efforts can doubt that such efforts often repeated not infrequently cause considerable cardiac excitement, which, if long continued, will lead to serious results. The normal pumping capacity of the heart is, say, 70 strokes a minute. This is 100,800 strokes in 24 hours, by which it sends 40,000 pounds of blood through the lungs and body. Now, in times of mental excitement or violent physical exertion the heart's pulsations frequently run up to 150 or 180 times a minute. After this increased amount of work, the heart, like any other muscle, needs an increased amount of rest, but inasmuch as it has to keep up pumping to sustain the life, the only rest it gets is in the relative decrease of the number and power of its strokes. If the heart does not get a sufficient amount of rest its tissues would gradually lose tone and become relaxed, just as the muscles of the body do when subject to long-continued strain, in which case the chambers of the heart or large blood vessels will become permanently dilated. If the over-exertion be still continued, then one of the valves of the heart may be ruptured, or some of the large arteries become enlarged, producing aneurism. The most severe exercises are the quarter and half mile run, also swimming matches and jumping, and the three mile boat race.

It is estimated that a person weighing 158 pounds who jumps six feet four inches high, expends force enough to raise 1,000 pounds one foot from the ground. Now let us inquire how large a percentage of athletes are injured while taking those violent exercises. During my professional career I have



CLAY. D. MANVILLE,

LONDON'S FAVORITE RACER.

Three years champion of London, and holder of the championship of Elgin and Middlesex, mounted on a Quadrant.

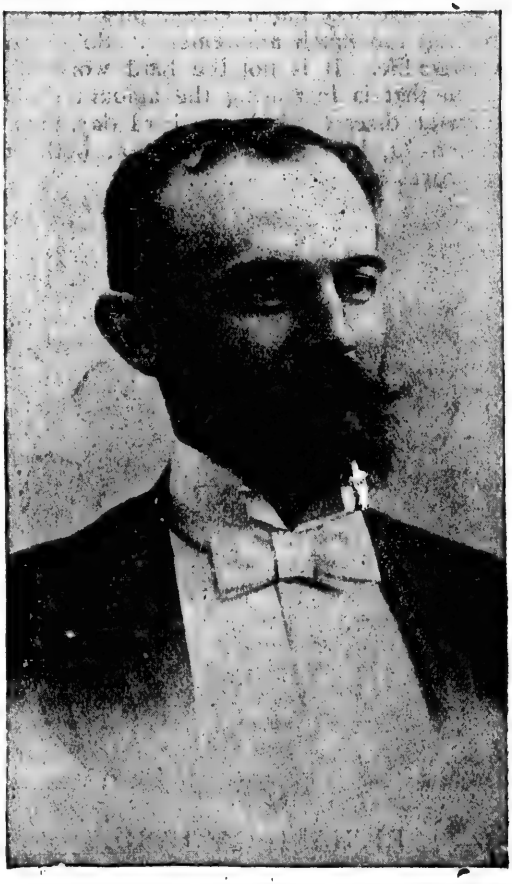
examined over 10,000 men of different ages, from all classes and conditions of life. I think probably over 1,000 were amateur athletes. Out of this number of athletes I have not found over one per cent. affected with the slightest cardiac disturbances, and in only two of these cases did I feel positive that the trouble was due to athletics alone. Now, when it is considered that the average age at death is only 33 years, that nearly 40 per cent. of the total number of deaths result from either lung or heart disease, and that the great majority of these cases are constitutionally weak in these organs, it will be seen that the average man is not likely to possess the vital material from which athletes are made. Dissipation in early life, excessive use of alcohol and tobacco, &c., vitiated air, poor food, want of regular exercise, insufficient clothing, cramped positions, overstudy, loss of sleep, all impair the heart's ability for great efforts. It is not best to engage in athletic exercises until one is at least 18 years of age, and in most cases it would be better for him to postpone his athletic attempts even until he is 20. The heart and lungs do not get their full development until after this age, and if there is any spot liable to be impaired before this age the system will have time to accumulate some little reserve against such deficiency. Another source of cardiac disturbance in connection with exercises is the wearing of tight clothing. A great deal of the fatiguing experience of new soldiers, (and ladies) can be traced to the physical exertion while wearing a close fitting uniform. The action of the heart is also much relieved by perspiration. I question the advisability of taking a cold bath when very warm from exercise. The shower bath or spunge is, in my opinion, not safe for the average athlete, to say nothing of the average man. As I have previously intimated, it is not athletics alone that are likely to injure our young men, but athletics plus dissipation in some cases, plus over-

application in others. It is not overstudy alone nor exercise alone that causes so much feebleness of health, but too much study, plus too much society and too much amusements. So it is also in business life. It is not the hard work of the day alone that is increasing the amount of heart and nervous diseases; it is the hard day, plus the wearing night, burning the candle at both ends, which proves so speedily exhaustive.



RICHARD GARLAND,

Manager American Dunlap Tire Company.



RICHARD F. KELSEY,

Manager Buffalo Branch THE AMERICAN WHEELMAN.

THE AMERICAN WHEELMAN, since the first issue in Buffalo, N. Y., the city of its birth, on March 5th, 1892, has been a pronounced factor in cycling journalism in the United States, and has had a remarkably successful career.

The 1st of January of this year the publication office was removed to New York city, and branches are continued in Buffalo, and have been established in Chicago, with a foreign bureau in London. It has a large circulation, and is read by thousands of wheelmen all over the country. Its advertising clientele is of the best character, and its rank and influence are universally recognized by the trade.

The Buffalo bureau, which includes in its territory Western New York, the state of Ohio, and Ontario, is conducted by Richard F. Kelsey, with offices in Buffalo. Mr. Kelsey has long been prominent in cycling circles in that city, having been connected with the leading clubs there, and foremost among the promoters of cycling interests. He has been associated with The American Wheelman almost from its first issue, and is widely known to the trade. He is an untiring worker and successful newspaper man.

"The Cyclist's Road Guide," is an indispensable adjunct to the tourist in Canada. published by W. H. Miln, 5 Jordan Street, Toronto, Ont.

UNCYCLING.

It was Macaulay, we believe, who said that the Puritans objected to bear-baiting, not so much because it gave pain to the bear as because it gave pleasure to the spectators. We have long suspected that the rooted Yankee prejudice against bullfights was due simply to an envious desire to deprive Spaniards and Mexicans of their cherished and legitimate amusement. The description of a Yale-Princeton football match, given by the correspondent of 'El Norte', a journal of Chihuahua, serves to show that we ourselves indulge in forms of amusement as horrid as the slaughter of a worried bull in a public abattoir.

'The athletes grapple one another with fury,' writes the correspondent.

'The beautiful women, the very mothers and sisters of those heroes who are going to water the ground with streams of blood and strew it with pieces of their flesh in their dispute over a rubber bladder, cheer them on with hurrahs and applause. And the handsome youths attack one another, tread upon one another, they break each other's noses, they kill one another. From beneath a pyramid of sprained members, broken collar bones, and bruised heads they drag out a gladiator, his face red with blood, his hip sprained, his hair matted, and his clothing soiled with mud made of dust and blood. Princeton has beaten Yale.

'Be still! You can say nothing of the barbarity of the Spaniards. In the bull-fights they disembowel brute beasts; in football they destroy men—respectable and studious youths, as if they were mad dogs or rapid asses. It is only two weeks since a mother was with her own hands helping to array her only son in the dress of a gladiator and giving him the Spartan's kiss to nerve him for vic-

tory ; and a few hours later they brought him to her on a stretcher, a corpse.'

Readers of Victor Hugo's "The Man Who Laughs," will remember his description of an English prize-fight. How revolting these things seem when viewed through eyes not dimmed by custom to their disgusting side.

But then every race has its peculiar idiom of brutality, as for other things. Perhaps it is the ancestral prejudice again that makes us prefer football and prize-fighting with all their barbarity, to the darts and swords of the arena.

R. R. MACFARLANE, STRATFORD.

R. R. Macfarlane, of Stratford, at present a student at Trinity Medical College, Toronto, but who graduates in March of this year, (1894,) is the oldest Canadian rider that took part on the track in 1893, having won his first event in 1884, and has taken part in racing almost every year since, winning many valuable prizes, and local championships.

Macfarlane is an amateur in the strictest sense of the word, never having spent a moment in what might be called training.

In the year 1885 he rode on a hard tire ordinary from Stratford to London, via Prospect Hill, from London to Goderich and from there to Stratford, a distance of 162 miles making the trip inside the twenty-four hours, but actually riding it in sixteen hours and a half.

In 1887 at the London Jubilee meet he won the only event in which he finished, falling in the next race, unfitting himself for the rest of the day.

Then in 1888 at Stratford, on July 1st, in a one mile open, he defeated Carman, Knowles, and McKay, showing that at that time he was undoubtedly the fastest rider in Western Ontario, and making it evident that if he had been taken up as was one of

these men just mentioned, by a club, and trained, he would have had his turn at holding the championship.

After this year he did not ride till 1892, when after having a Comet but a month, he entered and won the two-mile 2.40 class (as then classed,) at the Wanderers' meet.

In 1893 he rode the Stratford 10-mile road course in 32.23 from scratch, winning the race.

Next he rode in the Queen City 20-mile road race, and was placed by the handicappers only thirty seconds ahead of Smith, one minute ahead of Carman, a minute and a half ahead of Hyslop, showing that the handicappers considered him dangerous.

On the track in 1893 although showing up fairly well on several occasions, taking two firsts, four seconds, a few thirds, besides taking a place in several trial heats; yet owing to certain inconveniences not necessary to mention here he did not do himself justice, but is determined to redeem himself as far as possible in '94, as he will train on Stratford's new track.

The foregoing is only a partial recapitulation of Mr. Macfarlane's wheeling career, but is sufficient to show that he had and has still as good racing ability as any man in Canada, and the fact that this will be his tenth year goes to show that he must consider wheeling the finest of sports.

FINAL.

We have nothing, now, further to add, save a general note of thanksgiving to readers, purchasers, and publishers. And if this book shall be the means of leading even one faltering fellow-cyclist from the verge of the abyss of vice, idleness and wrecked body, to the path of glory, honor and vigorous health, by the use of the cycle, we shall feel amply repaid for our labor.

INDEX.

PAGE.

Age 134
A Hundred Years Hence 19
Animals 23
Ankle 28
Athletics 293

Back Pedaling 34
Balance 24
Bath 134
Bearing 42, 54, 64
Bell 25
Beverages 129
Brake 25
Breath 137

Care 54, 61
Carman, W. M. 207, 259
Caution 141
Centuries 165
Century Road Club 264
Chain 42, 56, 64
Championships 258
Choice 41
Cleaning 57
Coasting 26
Coca 122
Constitution 138
Control 26
Cookery 117
Cranks 42, 49, 58, 65
Cycler at Olympia 166
Cycling 15
Cyclienne Hints 218

PAGE.
Cyclienne Essay 219
Darkness 26
Dents 65
Deportment 142
Discretion 143
Dismount 31, 217
Dress 97, 99, 144
Drink 145

Elbows 27

Failure 288
Feet 29
Fit 146
Food 102, 110, 147
Form 27, 149
Frame 45, 65
French 229

Gear 46, 48
German 229

Handicap 150
Handlebar 66
Handles 66
Head 58
Helps 23
Hendee 201
Hill-Climbing 29
Historical 16
Hobby-Horse 16

Index 303
Influence 151
Insurance 292

Johnson 189
Key 66
Knees 30
Knowledge 22

	PAGE.
Ladies	209
Lamps	59
Learning	22, 23
Legal	231
Lending	59
Liniment	153
Liquid	121
Loafing	154
Macfarlane	301
Maker	50
Massage	156
McCarthy	259
Mecredy	185
Meintjes	190
Miscellaneous	258
Mount	30. 217
Mouth	31
Muscle	89, 93, 94
Nose	32
Nuts	59
Oiling	59
Osmond	193
Pace	32, 264
Pedals	51, 60, 66
Pedaling	32
Pedal-Slipping	34
Perth County Council	256
Physical Culture	179
Pneumatic	35, 78
Position	36
Practice	160, 162, 163
Race	164, 166
Racing Physiology	70
Records	258, 285
Records, Canadian	259
Records, Don Bridge to Whitby	267

PAGE.
Records, English 260
Records, Irish 261
Records, U. S. A. 262, 263
Records, 100 Miles, Road 267
Records, 100 Miles, Path (Nasmith) 268
Refinish 66
Relay Race 271
Repair 64
Responsibilities 38
Revolutions 49
Riders 273
Riders, classified 279
Rims 51, 67
Road Guide 236
Road, Laws of 38, 231
Road Making 257
Road Race, Athenæum 270
Road Race, Bowman 269
Road Race, Kingston 268
Road Race, Queen City 268
Road Race, Stratford 271
Road Race, T. B. C. 270
Rubber 250
Running 74

Sanger 192
Second-hand 52
Shoes 172
Skill 22
Sleep 173
Slippery Places 38
Spokes 67
Springs 67
Sprinter 175
Stand 60
Stocks 188
Stones 38
Success 39
Stimulants, Alcoholic 91, 101, 122

PAGE.
Temple 200
Thirst 31
Tires 18, 52, 67, 78
Tires, Inflation 61
Tires, Repair 252
Touring 224
Tracks 133, 283
Trainer 176
Training 124

Un-cycling 300

Walking 76
Wallwin 234
Weight 52, 176
Wheels 53, 61, 67, 68, 177
Wind 81
Windle 196
Wobbling 44

Zimmerman 50, 198

ILLUSTRATIONS

Beament, T. A. 96
Beyers, F 277

Canada's Racing Men (22) 2
Carman, W. M 69
Clark, J. C 159
Clark, W. B 125
Cook, T. H 128
Davies, H. P 152
Donly, Hal. B 63
Doolittle, Dr. P. E 80
DuCros, A 136

Hayes, Dr. A. N 132
Hill, E. C 87
Hunter, W. A 148
Hyslop, W 112

PAGE.

Knowles, A. J..... 248

Lane, A. T..... 99
Lewis, D. H..... 286
Lewis, L L..... 202

Mackenzie, C..... 156
Manville, Clay. D..... 295
McBride, R. H..... 187
McCulloch, J. K..... 240
McNaught, W. K..... 140
Miller, E. B..... 180
Miln, W. H..... 277
Mitchell, F..... 144
Monteith, John C..... 195
Morgan..... 290

Orr, G. H..... 101

Paul, W. R..... 167
Payne, W..... 116
Pedal,—union..... 287
Perth County Council..... 255

Robertson, R. A..... 108
Stocks, J. W..... 136
Wallwin, J. B..... 234
Wells, G. M..... 88
Wrench, (Harris)..... 291
Tire, Dunlop..... 220, 221
Tire, LaForce..... 226
Wanderer Chainless Safety..... 120

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E. C. Hill Manager Cycle Dept.
Bowman Hardware and Sporting Goods Co., (l't'd)
Hamilton.
Boyd & Son, T. W., 1683 Notre Dame St., Mon-
treal.
Canadian Wheelman, Hal. B. Donly, Simcoe.
Comet Cycle Co., 24 Adelaide St., W., Toronto.
Carroll, McKenzie & Co., 237 Dundas St., London.
Cycling, W. H. Miln, 5 Jordan St., Toronto.
Davies, H. P. & Co., 81 Yonge St., Toronto.
Day, T. J, Guelph.
Deeks, C. A. & Bro., 137 Yonge St., Toronto,
Eaton, T. & Co., 190 Yonge St., Toronto.
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Engraving Co., Toronto, 53 King St., W., Toronto.
Fisher, A. D., 22 Yonge St, Arcade, Toronto.
Goold Bicycle Co, (Lt'd,) Brantford.
Hammond,—Caps—129 Yonge St Toronto.
Hilbner, D, Berlin. [ronto.
Hyslop, Caulfield & Co, 13 & 17 Front St, W, To-
Jones, Express Cycle Works, 284 Parliament St.,
Toronto
Karr, G.S—Saddle—168 Beaconsfield ave, Toronto
Kenner, J. H. (City Book Store) Stratford
LaForce Pneumatic Bicycle Tire Co, Ltd,
52 Wellington St, W Toronto
McLean & Bulley, 69 Queen St, E Toronto.
Payne, Wm, London.
Pawpst, C W. Seaforth.
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—BY—

WM. PAYNE,

LONDON, ONT.



ALBERT A. POPE.

PRESIDENT POPE MANUFACTURING CO.,

American Cycle and Roads Improvement King.

"Col. Pope may certainly claim to have done more to popularize cycling generally than any other maker living. He seems never tired of publishing pamphlets on road repair, on the hygienic effects of cycling, and kindred subjects, calculated to spread the sport."—Irish Cyclist.

The present roads improvement agitation indicate great awakening interest in the subject, and in colleges road-making should become a branch of instruction.

A political issue should be made in every community, and the battle-cry should be:

"GOOD ROADS."

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JOHN O'DONOCHUE,

DISTRICT MANAGER, STRATFORD.



NEW YORK,

BUFFALO,

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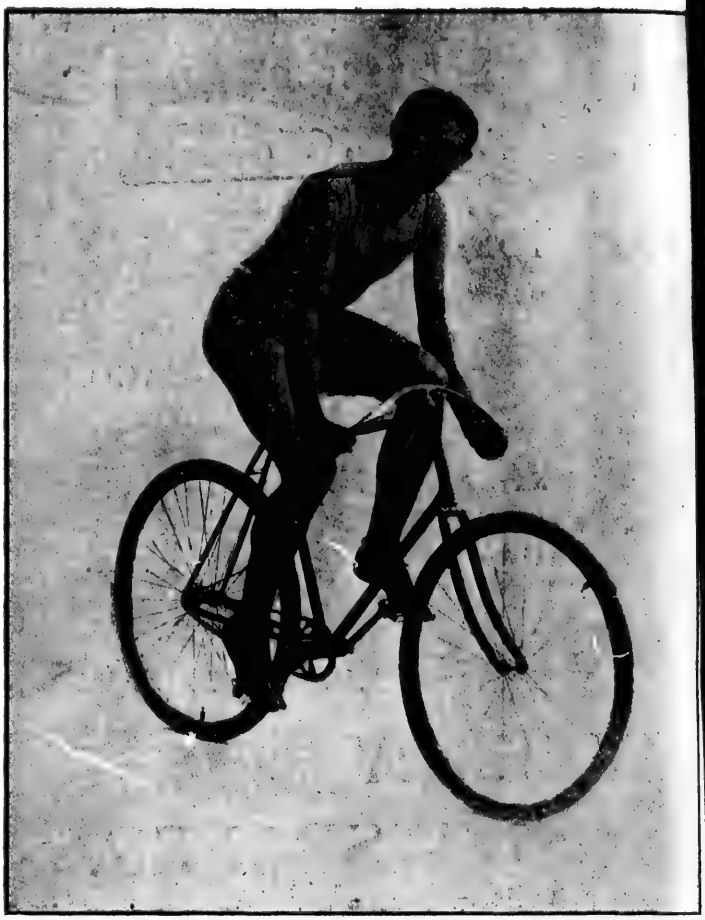
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Eugene Sandow, the strongest man in the world, tells the weak how strength is got.

"Fat men and women should avoid—or rather decrease by degrees—ales, porters, liquors, starchy cereals or fattening substances of any kind. Lean people should partake of these in moderation. Both can partake of juicy joints, be they from the sheep or from the ox, only let them avoid too much seasoning in the way of salt, pepper or sauces. These create an unnatural thirst which nothing but copious draughts of liquor of some kind can quench. Too much liquid overworks the kidneys and liver, and indirectly affects the heart.

Never sleep more than eight hours a day. Eat regularly and at stated intervals in the manner already described. Walk a mile or more ofter each meal before attempting any labor, physical or mental. A jaunt of two, three or five miles in the afternoon, when nature is at her best, will not harm you a particle. You are to be governed entirely by your powers, and nature will tell you when you have had enough. Then go to a gymnasium and exercise with light dumb-bells for an hour or two every day with frequent intermissions for rest. Any athletic professor can teach you all the curves. In this way you will develop the muscles of every portion of the body and surprise yourself at the end of a twelvemonth by the improvement in your condition. Of course a quick bath—a shower is the best—and a vigorous rub down should be taken after exercise.

EUGENE SANDOW.

KYPHOSIS BICYCLISTARUM.

(STRATFORD HERALD)

The London Lancet discovered the microbe-bacillus kyphosis bicyclistarum, and the cycle, being a household necessity for men, women and children, and a factor in modern novels of practical origin—hence comment, and even the Germans—the most thrifty people in the world, are adopting it at a phenomenal rate.

Ascertain distance from saddle centre to pedal at lowest point that fits, ride none other,—position is then a soldier's modified—a position of command, grace, and perfect muscular control.

The current impression, that "every cycler's spine is curved and chest cramped" is not so, as the bend is mostly at hip joint. When a person sits down at ease, or reclines to rest the spine assumes naturally a slight curvature—this is the natural position of rest. High handlebar too near the saddle is the chief cause of stooping.

To expedite locomotion—assume that position which is most easy, in other words, so sit upon wheel that body weight alone will propel—therein is attained proper position and the rider can perform fast and a long time without effort.

To obtain this place, or bend handlebar down and forward, so, that to reach handles, the rider must straighten out his spine and extent his arms and allow his chest to drop forward, pulling on handles if necessary, and supporting upper part of body on handles. Herein is the remedy.

The following articles "Sunday Cycling," by Rev. D. Williams, M. A., and, "A trip from Kingston to Chicago," by F. J. Pope, M. A., were received after the book was in the hands of the binder.

SUNDAY CYCLING.

The following is a summary of an address delivered to the students of Huron College on the subject of Sunday recreations, more especially Sunday cycling, by the Rev. D. Williams, M. A, formerly Professor at Huron College, London, Ont., now Rector of St. James' Church, Stratford.

SUNDAY CYCLING.

"We are not among those who would place Pharisaic restrictions upon the institution of Sunday—who would forbid the execution of most necessary and often most merciful works under a mistaken idea of the character of the day. But, then, neither are we among their oppositive modern extremes—those who would allow and encourage on the Sunday every kind of work almost which men are not engaged in on the week days. The extremes of Pharisaism and Puritanism with all their unlovely conceptions of life, and the extremes of modern unbelief with all its solicitude for man as an animal, are alike to be avoided. With the former, not only cycling, but all kinds of locomotion whatsoever, even walking, when not undertaken in obedience to the stern call of duty, would be, and has been, prescribed; with the latter, the Sunday would be devoted entirely to walking, cycling, driving, or some other amusement. The "golden mean" between these two extremes was enunciated by the "Lord of the Sabbath" nineteen hundred years ago: "The Sabbath was made for man, not man for the Sabbath." The rescue of the seventh part of our time from the demands of continuous labor was thus destined for the health and happiness and moral well-being of man—"it was made for man." It was

made for MAN—for the whole man, not for one part only of his complex being. Let it be remembered, then, that this weekly rest is of divine origin, has a divine sanction and a divine purpose. This needs no insisting. Moreover, human experience has amply proved the wisdom and the necessity of this periodical rest. Once indeed at the end of the last century, the Sunday was done away with by the atheistic revolutionaries of France. But the necessities of the laboring and other classes soon compelled its restoration, or at least its equivalent. Remembering this two-fold warrant for the weekly rest —the Divine commandment and the human necessity,—it ought not to be difficult for any person to know how to rightly apportion his Sunday. The first demand of it is, of course, the worship of God who founded it. Anything, be it ever so innocent, which makes it impossible to worship God must at once be avoided. This first. Then the second claim is for man's rest, and health, and happiness; and anything that interferes with this must likewise be excluded from the day's contents. Thus the two leading ideas connected with the Christian weekly rest, regarded from the point of view of Christian practice, are worship and health. Remembering these, we can easily graduate Sunday recreations, including cycling, in accordance with the best interests of man morally as well as physically. We shall always endeavor to maintain a right proportion between the two claims. It would obviously be wrong to ignore utterly either the one or the other. However much enamored we might be to cycling, it would clearly be as wrong to devote the whole of Sunday to it and ignore the claims of God, as it would be to devote all our work days to it and ignore the claims of work. The space of time left over from the necessities of worship, we may devote to cycling if we so choose, provided it is undertaken with a view to maintaining a high degree of health and promoting the general well-being of the man. Whenever any other object is

substituted, such as racing, or practising for racing, or the laborious exertion of accomplishing a certain distance in a given time, merely by way of idle experiment or of boasting, then the cyclist uses his Sunday with a totally wrong purpose; and in that case cycling on Sunday, as walking, driving, running or boating with a like purpose would be, is to be condemned. But when cycling is undertaken from necessity as the cheapest and most expeditious means of locomotion to the discharge of a duty, or when it is undertaken merely as exercise instead of walking, there is not, in our opinion, any harm in that method of taking needful exercise or of doing necessary work. Nevertheless, inasmuch as all who can cycle can also walk, it were better.—less offensive to public sentiment, and less liable to misconstruction—if cycling merely for exercise on Sunday were greatly curtailed, if not entirely discontinued, and the more sober and inoffensive form of walking be retained—especially as we have six days in which to cycle without any objection from any quarter. "All things are lawful to me, but all things are not expedient."

There is one form of Sunday cycling, however, against which we emphatically protest, i. e. the organizing of large cycling parties for all-day tours. This at once ignores the first claim upon our Sunday leisure and irritates and annoys a large majority of christian people and certainly tends to degrade the Sunday. There is not from the nature of things, as we have already allowed above, any harm in taking a ride on the bicycle on Sunday. In fact there cannot be, for if it is wrong to ride a bicycle, then it is far more so to drive a horse and carriage, and infinitely more so to ride in a railroad train. But we do not think it is wrong to travel in any of these ways when necessity requires it even on a Sunday. Locomotion is locomotion by whatever means it is accomplished, whether on a railroad train or by a man's own feet. It is ignorant prejudice, therefore, to oppose cycling on Sundays merely

because it is cycling. Nevertheless to organize large walking expeditions, or driving parties, or railroad excursions on Sundays—that the Christian public opinion of the country rightly condemns. It is unnecessary for man, it is the perversion of a God-given institution to bring about a forgetfulness of God and make it impossible to worship Him. It is the sacrificing of the moral aspects of an institution merely to gratify vanity and to secure a certain amount of gregarious animal pleasure, without an adequate physical benefit to counterbalance the moral loss. For precisely the same reasons we object to all-day cycling tours on the Sunday. They are utterly unnecessary for the physical benefit derived from cycling Often the exertion of all-day tours, when only occasionally undertaken, as all Sunday tours must be, is productive of even more harm than good. The sober and reasonable as well as the distinctively Christian public opinion of the country is decidedly opposed to them not from prejudice but from principle, because it is the sacrifice of the moral well-being of man without any clear gain to him physically. And it is to be sincerely hoped that cyclists will not lower themselves not only in the estimation of the reasonable and Christian public, but actually by such a sacrifice of the moral to the physical, and that they will thus refrain from bringing discredit upon an innocent pastime for all days and a great convenience even on Sundays. Let them remember the Sunday's two-fold claim—worship and health. As they would rightly frown down and ridicule the person who insisted upon spending the whole day in worship alone, at the expense of health ; so let it be on the other side—frown down the man who, by all-day tours on Sunday, insists upon sacrificing his moral well-being for the sake nominally of what is only a dubious means of health, but really for the sake of mere amusement—oblivious of the fact that his needs as a moral being are no less real than his needs as an animal, far more so than his needs as a pleasure-seeking animal.

EXTRACTS FROM A DIARY KEPT DURING A TRIP ON A BICYCLE FROM KINGSTON TO THE WORLD'S FAIR.

BY F. J. POPE, M. A., STRATFORD.

Modern science explains everything contagious by reference to germs, and if this applies as well to cases psychical as physical we may have an explanation for the rapid spread of the World's Fair fever which I caught early in July, and a few days meditation brought the resolve to go the way of the world. Having a considerable holiday the idea was conceived of going, at least a part of the way, on a bicycle.

Accordingly on July 18th, after getting a custom house permit for taking wheel out of country, also letters of introduction from Mr. S. R. Baillie, the worthy president of the Kingston Bicycle Club, to the Bike fraternity in general, a start was made from Kingston about 4 p. m. The same evening Belleville was reached at 9 15, after a delightful ride over the old York road than which there is no better road-bed for the same distance between Kingston and Chicago. Thus fifty miles only were ridden the first day, thinking that a full day's ride would be tiresome until the muscles had become a little more hardened to the work, and it is always well to begin a long ride cautiously.

Next morning having obtained the Power House signature to a Century certificate, Belleville hill was surmounted and I was fairly on my way. From Belleville to Trenton there is a lovely stretch of

nearly level road-bed with a slight incline towards Trenton. Thus with a good road beneath the wheel, a strong, invigorating morning breeze against the back, and perfectly refreshed by a night's rest for what could one wish more? And the sense of moving so swiftly and with so slight an effort was something akin to what, perhaps, we may yet live to experience in flying machines.

On leaving Trenton the road raises a long, tiresome hill, but the top once reached you are amply repaid by the magnificent view of bay, river, island and town, over which you are tempted to linger while indulging on your well-earned summit, minute, breathing spell. From Trenton to Brighton the distance is ten miles, and once the Trenton hill is surmounted the remainder of the road is fairly level, following here, as it does for miles further westward, one of the shelves of Lake Ontario's North Shore tenaces. By means of these tenaces from the lake inland the country raises itself by giant-like steps, each indicating the successive recessions of Ontario's waters during post-glacial periods. From Brighton westward the country, and likewise road, has a surprising sameness and Colborne, Grafton and Cobourg are quickly passed and unexpectedly one drops down on Port Hope, with its business part in a deep valley and residential portion on the western hill. Soon after leaving Port Hope the country becomes more undulating as you pass successively Newcastle, Bowmanville, Whitby, Pickering, and there are a good many hard pushes up hill, but also as many jolly spins down, and if music had been set to the pace it would have been a repetition of dead marches and galops. But to-day the worst was kept until the last, viz., the hills at Highland creek; bad enough at any time, but appalling to a rider who had been in the saddle all day. These hills were very tiring and, barring the mountain at Hamilton, the worst between Kingston and Chicago.

Shortly after leaving Highland Creek it grew dark and it was a relief after riding alone all day to meet near the Half-way House a number of Toronto riders, out for their evening spin, who with that cordiality so characteristic of wheelmen, kindly piloted me over the Norway hill and into Toronto.

Next morning was occupied with getting road directions through Western Ontario, and fortunate it was for me when I was directed to the genial editor of "Cycling," a veritable bicyclist enthusiast, who gave me the desired information as to best roads, but what was far better, a share of his enthusiasm for wheeling, and I left him more delighted with what I had already experienced and my anticipations for remainder of trip greatly magnified.

Leaving Toronto by Dundas street early in the afternoon, Hamilton was reached at twi-light after a very pleasant run. Next morning out of Hamilton, the roads were very dusty, not a breath of air moving, and the sun scorching. To the left you see the famous mountain and you shudder as you think of climbing it this hot morning, but presently the road turns to the left and in a moment you are at the foot of it and begin the long sinuous, fairly steep, two-mile climb to Ancaster. It is push, push, push, every inch, and there is no spare time or energy to enjoy the beautiful landscape spread out at your right. Happy you are to keep your machine in motion, and it is quite in order to stop and steady yourself by the rail of the embankment on the right while you wonder how much further it is to the top.

The summit once reached your troubles are fairly ended and now you find an excellent road and few hills, and after a mile of easy riding to wear off the wearisome effects of climbing the mountain you fall into your regulation road pace, and thus you glide on through Brantford, Woodstock and Ingersoll.

From Ingersoll the road chart indicated to go to

London by way of Thamesford, and then south to St. Thomas. But recalling the fact that two sides of a triangle are together greater than the third I resolved to find my way across concession roads to St. Thomas and thus save a few miles. It is during the wheat season, and this afternoon and evening I pass thousands of acres of the golden cereals, the abundance of which no less than the comfortable farm buildings, speak well for the thrift of Oxford and South Middlesex farmers. Dusk finds me North of St. Thomas and enjoying the hospitality of an old college chum, who during the summer months on the end of a fork-handle is laying by a store of physical potential energy to be transformed into mental kinetic energy next session. A little persuasion induced me to rest the next day (Sunday), but five o'clock Monday morning found me once more on the road and a brief run led me into St. Thomas. I struck the Talbot Street Road and from here to Windsor, barring nine miles of sand east of Palmyra, the road-bed is splendid and with few exceptions a dead level. Mile after mile slips away, the road being so smooth that the wheel guides itself and full opportunity is given for viewing the magnificent farms and sleek herds I am passing. Shortly after leaving Blenheim you find the road leading along a ridge, about thirty feet higher than the level farm country on the right and forty above the waters of Lake Erie some 400 yards to the left. This ridge, evidently the work of previous wave action, follows the north shore of Lake Erie for miles; winding through magnificent orchards of apple and peach, while here and there for short distances it is o'erarched by old fashioned walnuts and sleepy elms, and you ride as it were through the aisle of a cathedral.

The road is so smooth and the fresh breeze off Lake Erie so exhilarating that one can scarce refrain sprinting and unconsciously you find yourself maintaining a pace which induces the different per-

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sons you catch and pass to ask if you are riding a race.

But there is an end to everything—suddenly a whip-like crack, and I find my rear wheel running on the rim. The morning had been cool, the road smooth and I had given the rear wheel an extra inflating, and now the heat of the road, caused by the hot July sun, has produced an expansion of air in the inner tube the cover could not resist. So loud and sharp was the report, that a farmer's boy furrowing corn near by, rushed to the fence and was on the point of upbraiding me for trying revolver practice on his dog. A word, however, explained everything and secured his help in repairing tire, and in little over an hour I was again in the saddle and shortly after dark rode into Leamington.

The following morning, being certain of the road, I neglected enquiry, and in consequence missed the road at Cottam, and in an hour or less found myself at Harrow, away down in the south-west corner of Essex county, and twenty miles off the right route.

North from Harrow I passed through Macgregor, a French settlement, and if my dinner had depended upon my knowledge of French, or the good French people's knowledge of English, a protracted fast would have been in order; but a hungry cyclist generally has a decidedly suggestive manner for indicating his wants and soon I was regaling myself with beans, onions, antiquated pork and new potatoes. No after-dinner chat to-day, a simple "merci" and a "portez vous bien" and I continue the road to Windsor. The day is the warmest yet—92 degrees in the shade. Shut in between the tall walls of primeval Essex elms, that nearly everywhere line the roads, and without a breath of air the ashy clay-dust rises in clouds about me, and it is like a plunge into the rear end of a threshing machine to pass a vehicle—because keeping of the eyes open is impossible, and the best one can do is to grip

tighter, struggle for a breath and trust you will come through all right. Consequently it is with a sigh of relief that I discern the spires of Windsor and the smoke of Detroit across the river, and a good bath in the Windsor Y. M. C. A. A change of sweaters is quite refreshing and I take the ferry for Detroit,—this mile across the river being the only portion of route not wheeled during the whole trip. On landing at Detroit, and presenting myself to the Customs Department I am informed that since I am going to be in the country more than two days I shall likely have to pay duty on my wheel, and I am sent up town to see the Collector of Customs, my wheel meanwhile being left with landing waiter. On the second floor of the post office, in an easy chair, surrounded by legal documents, and volumes I found the sparely built, dark complexioned Customs official. The telephone from the landing had advised him as to my coming and nature of my business, so that only a word was necessary for me to state my case—when the following conversation ensued :—

Coll.—"If you are coming into the city for a few days bring your wheel and it is all right."

P.—" But I wish to push on to Chicago."

Coll.—"As I said before, if you are coming into the country for a few days take your wheel and it is all right, but if you are going on you will have to pay 40 per cent. duty."

P.—"May I not put up a deposit and get it when I bring the wheel back on my return trip ?"

Coll.—" The only deposit you can make is the 40 per cent. and the Customs keeps it."

P.—" Does this mean then that I have to pay 40 per cent. or else turn homewards."

Coll.—" Look here, young man ! If you are coming into our city for a few days you can bring your wheel in and it is all right."

The true state of affairs began to dawn on me by

this time, and I informed the collector I would stay in the city a few days.

Coll.—"All right. You can get your wheel."

Thus the obliging official, although he adhered to the letter of the law, was a little lax in the spirit, but all to my great convenience, as I quickly secured my wheel without further delay.

This evening and following day I spent with old Kingston friends, the time being mostly occupied in seeing the sights of the river city. The residential portion is particularly beautiful and characteristic, not only as regards whole avenues lined with palatial residences—as Woodward Avenue—but more especially on account of the great number of home-like dwellings of the middle and lower classes.

Detroit is essentially a city of homes and tenements, flats and even tenacies are in the minority. But Detroit's pride is Belle Isle Park, centrally situated midway between the American and Canadian shores, being linked to the city by a stupendous steel-bridge, about one half-mile in length. Some ten years ago the island, five miles long and two in width, was a marshy elm swamp, the harbinger of mosquitoes and malaria. But all this is changed. Magnificent roads and walks have been built, lawns and fields for various sports have been levelled, while miles of canals sufficiently wide and deep for the navigation of a skiff cross the island in all directions. In many places the canals are o'erarched by lofty primeval elms, and margined with gigantic ferns, while many of the trees are festooned with ivy, the whole suggesting the idea we have at some time conceived of tropical scenery.

Before the days of railroads Detroit was connected with Chicago by a line of stages, over a route which is yet called the Chicago turnpike, just as in by-gone days Kingston was with Toronto over the York Road.

The turnpike leads out of Detroit by way of Michigan avenue, and like the main road running

out of any city passes many minor suburbs and villages before it reaches the open country. For miles the road is perfectly straight, and lined on either side by magnificent maples, so that although the sun is scorching I ride in a delightful shade, keeping well in mind the one direction that is to be my guide across the states of Michigan, Indiana, and a part of Illinois. The direction is brief:—"Follow the turnpike."

Wayne, a small town, and many villages are rapidly passed and after twenty-two miles the smoke from Ypsilanti, a fairly sized manufacturing town appears. Ypsilanti is built on two hills facing each other, while between runs a river which supplies the motive power for the various foundries and mills of which there appears to be a goodly number. Leaving the town, after a spin around a few of the principal streets, nine miles brings me to Ann Arbor, renowned for its State University and medical schools. The various college buildings are large and elegantly designed, but as they are closed, I have to content myself with their outward beauty, and a wander around the well-kept lawns. The country in the vicinity of Ann Arbor is the best between Detroit and Chicago, and has a considerable undulation, in marked contrast to the dead level leading out of Detroit.

Out of Ann Arbor the road crosses a small stream and then raises a long, tiresome, winding grade from the summit of which the country before you appears a succession of giant-like billows. Deep-valleyed meadow land surrounds you, in places marked by crowning clumps of silver maples, in others by spruce, while here and there lines of trees climbing over the hill tops cut the turnpike at all angles and indicate cross country roads. Just as I mounted the brow of one of the largest hills I met a young cycler who passed like a flash, his coat and a small bundle strapped to his handle-bar, his cap set back, his hair like that of a spaniel coming out of a pond,

and his face as red as a piece of raw beef. With distended eyes, fastened upon the road-bed, and head and body bent low, he was apparently after the bubble record, and had no time to waste on scenery or people.

Nine miles out of Ann Arbor the road runs through Saline and fifteen further on Clinton. A few hundred yards past Clinton the gravel road ceases, and the turnpike with its pretentious name, is here, as for miles further on, a mere track over sand hills. The first hour's pushing through this shifting mass is very trying and makes me long for a good macadam.

On enquiring as to the distance the sand extends I am informed that the road is firmer some fifteen miles further on, but at the end of the fifteen miles I find it worse than ever, and again I anxiously enquire and obtain a similar reply, and thus I ride and enquire for a day and a half, covering in all about one hundred miles, but always obtaining the same reply and finishing with little faith in American rural veracity.

In the centre of this wilderness I run across a small lake, elliptical in form, about three miles in circumference, and set in a basin whose sloping rim of sun-burnt green is relieved by great gashes of exposed white sand. The lake is a considerable summer resort for a certain denomination of Indiana folk, who gather here in crowds, during the warm weather, to enjoy fishing, religion and flirtation. Enquiry of some of the resorters sauntering along the road, finds that in their estimation, the fishing is good. Catfish and yellow bass, with an occasional pike, make up the list, and with such rare sport in a small lake you can shout across, filled with rushes and water lilies, the shore a sand bank, the surrounding shade scrub oak these people revel in the beauties of the place, with all the enthusiasm of a Muskoka or Thousand Islands camper after his summer outing.

Here in western Michigan I find a number of German and Bohemian farmers, all apparently thriving, but terribly ignorant of everything, exeept price of butter and how to work according to the most laborious methods. However, without exception, they are very hospitable, and I sample the contents of their dairies while they walk around my wheel, rub the tires and enquire if Ontario is near Toronto.

Hour after hour it is the same unhomely and unkempt region about the onward path; tumbled sand-hills with charred stumps that drearily imitate the shape of monuments with never a good shade tree, only scrub oaks and sumach, while instead of grass a few horse tails push their way up through the sand.

The shifting road-bed slips from beneath my machine, I cannot steer, and every few hundred yards come to a stand-still with wheels embedded so deeply that the pedals are down on the sand, and I come to the conclusion that there are drawbacks in cycling amid these interminable sandhills of Michigan during a hot wave in July. Even the cows are disgusted with the road-bed and have made for themselves meandering paths in and out of fence corners, around telegraph poles and across ditches. These cow-paths in many cases are a great boon, and along them I run for miles thinking that the roads are not so bad after all, but suddenly the wheel stops, a gentle header is in order, and I find that a bicycle with handle-bars two feet in length cannot go between a telegraph pole and a rail fence distant from each other only half a yard. But the paths fail for miles in a place and I am compelled to plough through the sand. It is on the wheel and off, twenty times to the mile, now riding in the middle of the road or along a short cow-path, now preferring the ditch to either, and thus I plod on sandwiching one hundred yards to a half mile walks in between, by way of change. Some say that a change

is as good as a rest, but I am sure not of this kind, and as night comes and the town or Bristol I am ready for a bath and bed. This ends my second day out of Detroit, and I have been riding, walking and pushing steadily from 6.30 in the morning until 9 p m., and find I have barely covered 55 miles, but the last six were fairly good and the landlord informs me the roads are better for rest of the journey. Here and there through this sand wilderness I passed little villages, which, in marked contrast with the barren country along the road present charming pictures of rural life,—Quincy, Sturgis, Independence, and others, but all with names remindful of the early days of the Republic. Each is a marvel of neatness, every house has its well-kept lawn, giving it a setting of exceeding grace, and although quaintness and homelikeness are striven for, yet, on the whole, it is rather too consciously artistic; it has a fixed stagey appearance, and air of sitting for its picture.

Next morning, a few minutes after an early breakfast with a garrulous apple-tree pedlar, and a tall, strapping, long-limbed, small-headed, curly-haired Michigan Dutchman, finds me again on the road, but not before the Indiana sunrise had ushered in a noble summer's day. There is not a cloud, and in the woody valleys among which the road winds its way the atmosphere preserves a sparkling freshness till near mid-day.

Just out of Bristol I cross a wooden bridge, which spans the St. Joseph's river, here a meagre brook, and I flash by the parson of the town German church—tall, slender, clean shaven, except under his chin, broad, black hatted with still darker locks thrusting down under it, and around his neck. He walks dreamily, with his hands clasped behind his back, but the chrr, chrr of the chain causes him to pause and look with startled sadness, as it seems, for this rude intrusion of 19th century progress upon 18th century meditations.



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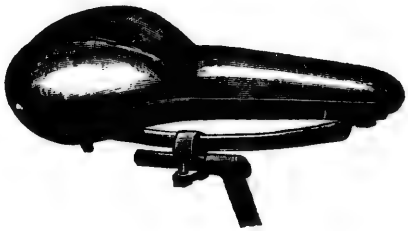
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Remarkable Record.

Sarnia, Ontario, January 5th, 1894.

AMERICAN DUNLOP TIRE CO.,
NEW YORK.

GENTLEMEN :—

I have just been officially advised that I have been fortunate enough to secure the Diamond Gold Medal offered by the Century Road Club of Canada for the greatest number of Centuries ridden by any member during 1893.

The wheel I rode entirely is a 24 lb. "Raleigh" fitted with your 1893 Light Racing Tires. The wheel came through with hardly a scratch, and the tires never had a puncture, and I never had occasion to put a pump to them while out—in fact, I rode 4 Centuries during two weeks' time, and never had occasion to put any air in the rear wheel during that time. I think this is remarkable, and what makes it more so, is that 11 out of my 21 Centuries were ridden during November and December over hard, frozen, and rough roads,—ice, snow, etc., etc., which I think is a test of the severest kind.

Yours truly,
(Signed) M. E. GLYNN.

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Hæmorrhoids are permanently relieved by cycling with a good saddle that fits the rider, such as Karr's, Brooks', Sagers'. Nevertheless there are individuals who will submit to Scalpel, etc., although an easy safe and sure remedy is obtainable.—Cycling.

Ten miles from Bristol I run into Elkhart, and from here to South Bend, sixteen miles, I ride a well-trodden path along the south shore of the St. Joseph's river, now of considerable size. Midway between these two places is Mishawaka, a neat little town, with an appearance of retirement, and destitute of that smoke and din found in manufacturing centres. However, I noticed that there is a large brewery as in almost every other American town, and frequently in villages I have passed through; it being the one business in this country that flourishes in the deadest community, and is apparently uninfluenced by silver questions or hard times. South Bend has a population of about 90,000 and the different manufacturing establishments, with their noise and smoke, mark it as a place of enterprise. One of its chief industries is the manufacture of wagons, etc., as well as great quantities of spokes, hubs, felloes and other carriage-makers' supplies, and if one may judge from the palatial residence and park-like grounds of the head of one of the principal firms, situated as it is in the heart of the city, the business must be attended with considerable profit.

West from South Bend, for five or six miles the country is very rolling, but fairly good for farming, resembling that around Ann Arbor; but, six miles from the city, after crossing a wide marsh, I strike the Terra Coupee plains—a dead level, destitute of trees, except a few planted for shade,—nearly circular, about eight miles in diameter and surrounded by wooded hills. The soil is a rich black loam and the long-headed oats speak well for its productiveness, but how farms are drained is more than I can solve.

Just as I climb the hill, bordering the western side of the plain, I come to a small town, New Carlyle, and proceed at once to the usual place for information about road, viz., a livery stable. When I first started, my enquiries were made of farmers,

but I found their knowledge rarely extended for more than twelve or fifteen miles, and at the best was very confusing. Next I tried the hotels, but they were worse than the farmers, because, at them I usually found three or four Rip Van Winkles sitting around, each of whom knew all about the road but no two who could give the same directions, and I generally ended by gaining no information, and at the same time getting badly muddled as to what I had previously learned. But livery proprietors and their drivers I find have, in most cases, been over the various roads for a considerable distance, and on the whole their information is the most reliable I get.

Out of New Carlyle, for four or five miles, the turnpike is fairly straight and easily kept, but presently a halt is necessitated on coming to where the road forks—this forking is an adaptation in road surveying for which American surveyors apparently have the patent. Before there is time for a moment's puzzling as to which road to follow, simple directions are obtained from two women, who appear through a gate, the one carrying a hoe over her shoulder, the other, and elder, pushing a fat, dirty, young American in a rude perambulator. "Foller the telergraph loine." Thus instructed, sight of the wire—this best of all road charts to a bicyclist in an unknown district—is intently kept track of as it leads through a maze of cross roads.

In general, through this portion of Indiana, the roadway is narrow and close set with hedges—great solid banks of green which cut the country up into a sort of gigantic checker board. In between these hedges the sunlight is scorching, and the atmosphere very oppressive, besides the road-bed is blanketed an inch deep with a dry dazzling dust, which at times completely clouds one; while now and then, through gate openings and every space between hedges, come furnace-like whiffs from burning meadow stubble and parched pasture.

Sixteen miles past New Carlyle I come to Laporte. It is Farmers' Day, and the main street along which I ride, is lined on either side with wagons, buggies, etc., the whole constituting a kind of market, but unlike in our Canadian markets, the horses are hitched to posts in the sidewalk while the rear end of the wagon points to the centre of the street.

This arrangement is, I presume, a survival of the custom of hitching horses to posts as practised in the days when the roads, if possible, were even worse than now, and marketing as well as locomotion was accomplished on horseback.

West of Laporte the road leads through several heavily wooded belts. In the midst of one of these belts a fair-sized stream crosses the road beneath an iron bridge, where I come across a middle-aged man comfortably seated and fishing, in semi-police outfit. He is a tall, raw-boned, red-headed Yankee with a gleam of shrewdness and importance peering through the mask of Uncle Sam officialism. After the preliminary salutes, *re* weather, bicycles, roads, etc., and learning where I am from, the sergeant, (for so I learned his rank to be), intimated that he had a brother in Manitoba, which fact he thought would greatly interest me coming from Eastern Ontario—a far-fetched conclusion, but to his mind, as to that of the average American, these two distant Canadian points are associated as at a day's driving distance.

Riding day after day, through farming districts, you come to the conclusion that the country has a surprising sameness in its appearance, and at times the route would have been monotonous but for the fact that the fences, buildings, and even stumps and stones along these American roads are frescoed with signs, the artistic devices and wording of which are decidedly amusing. To-day I observe that Beecham's pills and Johny-cake chewing tobacco take the

lead with Quaker oats and Kickapoo Indian Cure close seconds.

I am now about fifty miles from Chicago and the nearer I get the wilder I find the country becoming. It is more sandy, more tumbled, and the art of road making is confined to always driving in the deep, sandy ruts made by preceding travellers. My patience is well nigh exhausted, and I am contemplating taking the train at the next station for the rest of the journey when, as I take a glance at the Michigan Central R. R., which here runs close to and parallel with the turnpike, I observe that it has two tracks with an apparently smooth path between them. I get over the fence to further investigate, and to my great surprise and delight I find it rideable. It is only the work of a minute to lift wheel over the fence, and I start down the track quite easily maintaining twelve miles an hour, and barring having to dismount about every twenty minutes to allow a train to pass, I find it as easy riding as on a macadam. At first I thought I should be troubled with cattle guards, but they are scarce, in some places being ten miles apart. The country on either side of track is nothing but sand hills; there are no farms, no houses, and thus no occasion for roads, consequently the scarcity of cattle guards. I pass several small stations, but their use is more for switching and passing trains than for accommodation of local traffic. Since riding on the track, I have passed and met a number of the knights of the road, taking the great shoe line via M. C. R. R. to and from Chicago, and now I find the cause of the smoothness of the cinders between the tracks, viz., the great number of tramps passing into, and out of Chicago over the M. C. R., have ground and packed the cinders into a fairly good path.

I had thought this morning to reach Chicago by night, but at twi-light the mile posts along the railroad indicate that I am twenty-one miles from Dearborn station in the centre of the city. Just as the

darkness deepens, so that I can hardly see where I am riding, the lights of Tolleston junction—where Pittsburg and Fort Wayne R. R. crosses the Michigan Central—appears. The village consists of four or five houses, the homes of section men, two beer saloons and the signal station. One saloon consists of but a single room; has a bar, a few chairs, two pool tables, and is filled with uproarious section men, having their usual Saturday night outing. No stopping here. I cross the track to the other and find it only slightly better. But it is Hobson's choice, and the German landlady who is behind the bar, informs me she can give good accommodation. Being somewhat fatigued, and expressing a wish to retire at once, a little yellow-haired, dirty-faced, bare-footed Katrine of some eleven summers, with the light of a dirty tin lamp, leads the way up a narrow stairs to a low, stuffy, small room which contains two beds. As my eyes grow accustomed to the dim light cast by the smoky lamp, I find I am to have a room-mate, as a young man of about twenty-five lies sleeping in one of the beds. But more is in store for me. Turning down the sheets I learn I am to have not only a room-mate but bed-fellows as well, since lifting of the sheets exposes between the coverings, under the pillows, in the tick, in fact all over the bed myriads of those midnight wanderers scientifically known as Cimex Lectularia, alias bed-bugs. No bed to-night. I shake my coat, hustle out of the room and hotel to wander about the junction feeling very miserable as I prospect over spending the night on the railroad bank. But the light from the signal station appears cheerful, and I make my way up the long flight of steps into a little room, with windows for walls, nearly filled with levers, and occupied by an elderly man who nods me welcome. Through the early part of the evening he is kept busy with his different levers, as he gives the lights and switches to the various trains, but towards morning the trains are

not so numerous and he explains to me the block system of crossing. Just as I begin to feel sleepy the first rays of day appear over the eastern sandhills and presently it is sufficiently light for riding. In about an hour I come to Hammond, a small town, whose buildings belong mostly to either of two classes,—saloons or pork-packing establishments. As I leave Hammond to the N. W., directly in front of me, I observe a dark cloud which enlarges as I advance and I fear it portends rain; but nearer approach shows it to be a monstrous pall of dark smoke, over-hanging the goal of my journey—Chicago.

It has been said that all roads lead to Rome, but I veritably believe that all American roads lead to Chicago.

The great sand plain just south of the city is overspead by a regular network of rails. Trains are running in every direction and I have to dismount frequently where various roads cross the M. C. R.

It is related that a certain celebrity of American lineage could not find a certain city "there were so many houses," but I am having trouble finding Chicago, there are so many small towns—Kensington, Pullman, etc. At Pullman I leave my good friend the Michigan Central and ride through the town, then along dusty sand and clay roads to South Chicago and breakfast. After breakfast, through South Chicago, up Cottage Grove avenue, pass the Fair and dismount where my lodging has been, pre-arranged on 35th street.

It is now nine and a half days since I left Kingston, but I have only been riding seven, and I find I have covered in all about 825 miles. This distance may appear a little exaggerated when compared with railroad mileage, but when it is remembered that the road for miles twisted around sandhills, zig-zagged first to one town then to another, I think I am keeping within the limit.

On the whole the pleasures of the trip have great-

ly exceeded my expectations. At times the sand and heat were almost intolerable but now it is over and they are forgotten as I recall the pleasanter aspects. Besides, I think I have been more than repaid for my troubles by what I have learned of the nature of the states of Michigan and Indiana and their people—knowledge which can never be gained from a car window, but only by living and moving among the people as only bicyclists can.



GEO. K. BARRETT,

EDITOR "THE BEARINGS," CHICAGO, ILL.

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